Two Clinical Lectures
ON
MALARIA AND THE MALARIAL PARASITE.

Delivered at the Medical Graduates' College and Polyclinic,

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LECTURE I.

Delivered on Feb. 21st, 1900.

GENTLEMEN,—This lecture is devoted to a description of the parasite and of its life cycles. The existence of a parasite in malarial disease has been suspected for a long time, but only very recently have we had absolute assurance that such a parasite exists. Some time in "the thirties" Meckel described in the human blood certain black particles which he found in leucocytes and in certain pale, leucocyte-like bodies the nature of which he did not know. When he saw these bodies he certainly saw the malarial parasite. His observations were repeated and extended in "the forties" and "the fifties" by Frerichs and Virchow, and they, too, undoubtedly saw the malarial parasite. But it is one thing to see and quite another to recognise; discovery is recognition.

Laveran was the first, in 1880, to recognise the true nature of these pigmented bodies, to discover the malarial parasite. He was working in Algeria on those pigmented bodies which have since been described so often, and while contemplating one of them he saw that its periphery was beset by a number of actively moving filaments. This fact of movement conveyed to his mind at once the assurance that what he saw was a living body and was really, considering the circumstances under which he found it, the parasitic cause of malarial disease. Step by step he added to his knowledge by discovering not only these peculiar flagellated bodies, but also amœboid bodies composed of similiar materials and occupying the interior, or attached to the surface, of the red blood corpuscles. In addition to these he discovered certain other bodies having a peculiar crescentic shape. He also saw, apparently free in the liquor sanguinis, minute spore-like particles. He recognised, too, the presence of specks of dark pigment, not only free in the liquor sanguinis, but also included in these various parasitic bodies and in the white corpuscles. He saw a medley of things; but the nature of the connexion of one with the other he could not distinctly affirm. The fact is that Laveran had plunged into what was then almost a new zoological kingdom. Little wonder, then, that he did not recognise the relationship to each other of the different items, so to speak, that composed the strange fauna. It was as if some intelligent being from the planet Mars, unacquainted with our fauna, had dropped into this world and had come across some such zoological collection as the inhabitants of a fowl run. He would see fowls, and feathers, and eggs, and fæces, and empty egg-shells, and chickens, and so forth, but he would not be able for a long time to recognise the connexion between the egg-shell and the chicken or between the feather and the fæces. And so, in the first instance at all events, they would be all more or less a medley and confusion of apparently unconnected facts.

It was reserved for Golgi, the distinguished Italian, to beat out the music that Laveran could only hear but of which he could not find the tune. He was the first to piece together certain of the different forms that Laveran and others had seen and described, and to work out one phase of the malarial parasite, and to indicate the zoological connexion between the different items. As the result of Golgi's work we now know that the malarial parasite in its mature form has the appearance—I shall take the tertian parasite as a type—of a mass of pale protoplasm occupying practically the whole of the red blood corpuscles. Scattered through this mass of protoplasm are a number of black specks or little rods of intensely black pigment. Later in the life of the parasite a peculiar thing happens: all these little specks of black pigment concentrate usually towards the centre of the organism whilst the pale protoplasm arranges itself into little spherules, the whole constituting what is known as the "rosette body." Later in the life of the parasite the surrounding blood corpuscle breaks away and this rosette body floats free in the liquor sanguinis and then breaks up into its constituent spores, setting free at the same time the black pigment clump. Phagocytes attack many of these free spores and probably absorb most of them, as well as the little pieces of pigment. The result is the pigmented leucocyte, so characteristic of malarial blood. A few of the spores escape and in virtue of some peculiar faculty, which is not at present understood, enter fresh blood corpuscles and appear there as pale specks in the hæmoglobin. These pale specks, if watched in perfectly fresh blood, are seen to be possessed of very active amœboid movement. They throw out pseudopodia in various directions and wander about through the hæmoglobin of the corpuscle. After a time they increase in size by assimilating the hæmoglobin. By-and-by there appear somewhere in the parasite those specks of black pigment which we saw in the mature animal. Later they increase still further in size until they come to occupy half, and finally nearly the whole, of the blood corpuscle. Again there is concentration of pigment and the formation of little sporules. This is the cycle, as described by Golgi, of the tertian and quartan parasite.

It was further reserved for Marchiafava, Bignami, and other Italians to make out the cycle of the more malignant and dangerous parasites—the æstivo-autumnal or, as Koch calls them, the tropical parasites. The cycle of this tropical or æstivo-autumnal parasite corresponds in plan almost exactly with that of the quartan and ordinary tertian parasite. It was now found that the life cycles of these parasites ran parallel with the clinical cycle of malarial disease. It was found that when the parasite had arrived at maturity the apyretic interval in an ague was about to conclude, and that when the parasite had arrived at the sporulating stage the patient had entered on the shivering stage of his fever. During that and the succeeding hot and sweating stage the spores had entered the red blood corpuscles, and when the parasite had ensconced itself in the red blood corpuscle and begun to grow the fever had come to an end. It was found in tertian fever that the cycle of the parasite took 48 hours to complete, exactly the length of the cycle of the clinical phenomena. In quartan fever the cycle took 72 hours, exactly the length of the clinical cycle of that form of malarial disease. In the malignant or tropical fevers there was found to be a similar correspondence between the cycle of the parasite and the cycle of the disease. It was found that with each recurring paroxysm of fever there was a renewal of the life of the parasite, and that in this way the life of the parasite was continued from period to period and from cycle to cycle for weeks or even, especially in the case of quartan malaria, for months. Now this explains very well the way in which the malaria parasite contrives to maintain its existence in the human body, but it does not explain how it passes from host to host, neither does it explain certain appearances that Laveran and everybody else who has studied the subject have witnessed. In malarial blood you sometimes see that peculiar body, the flagellated body, which I have already alluded to as consisting of a sphere surrounded by from one to six or seven long tentacles or arms in a state of continual agitation. Neither does it explain the peculiar crescent-shaped body which also so pointedly arrested Laveran's attention. This latter body one can see by careful examination and staining is developed inside a red blood corpuscle, for one can see around the periphery of the little crescent a narrow rim of hæmoglobin, and passing from one horn of the crescent to the other a sort of arc of hæmoglobin, obviously the remains of the red blood corpuscle in which the body had developed. Golgi's scheme leaves the passage of the parasite from host to host and also the nature of these two bodies unexplained. What relation have these two bodies to the life of the parasite? Their nature and purpose do not receive any illumination from Golgi's theory. You will find in all forms of malarial infection, if you look enough, the flagellated body; but, strange to say, you will not find it in malarial blood immediately after it is withdrawn from the body. It is only after an interval of minutes, perhaps a quarter of an hour, after the blood is withdrawn that these flagellated bodies appear. Whence do

they come? If you make a preparation of malarial blood from a patient by pricking the finger and spreading a little of the blood on a slide, fixing it immediately with heat or alcohol and staining it, you will never see any of these flagellated organisms. But if the slip be kept moist and in a warm temperature for half an hour and then stained the flagellated bodies will be seen, proving that they develop only after the escape of the parasite from the human body. Such a fact is very interesting and obviously has some significance in connexion with the life of the parasite. Whence, I ask, come these flagellated bodies? If you select one of the crescent-shaped bodies for observation and keep it continuously in the field of the microscope and watch it you will see that the crescent body slowly undergoes in many instances a change of shape. You will see that from being a rather long and elegant figure it will become a short, dumpy, reniform sort of body. You will then see that the crescent shape disappears and gradually gives place to a spherical shape, the pigment remaining at the centre. If you continue to watch you will see peculiar movements occur inside the little sphere, that the pigment becomes diffused and begins a sort of boiling movement. Gradually this boiling movement becomes more energetic and is communicated to the mass of the little sphere. Then suddenly, whilst you are watching, you will see flagella thrust out from the periphery of the sphere. Later you may see one or more of these flagella break away and swim about. If by great care you keep one of these swimming flagella under observation you will find that it wriggles about through the liquor sanguinis and that when it comes into contact with a blood corpuscle it straightens itself out and indulges in a peculiar vibratory movement, as if endeavouring to penetrate the corpuscle. Sometimes it is seen to attack a white blood corpuscle. In human blood it is difficult to follow the progress of these free flagella. But in the case of a parasite of the pigeon, known as halteridium, which closely resembles the malaria parasite, you can easily follow the destiny of the free flagella. In the red blood-corpuscles of the bird you find lying alongside the nucleus a pale body shaped something like a halter containing black pigment and consisting of pale protoplasm exactly as in the case of the human parasite. If you keep the halteridia under observation you find a certain proportion of them slip out from the including blood-corpuscle and then assume a spherical form. You will find that these escaped bodies are of two kinds, one kind being beautifully hyaline and the other granular. If you watch the hyaline forms you will find that after a time a peculiar boiling movement occurs in the pigment and later that flagella are thrown out, exactly as in the case of human malaria. By-and-by the flagella break away and swim about in the liquor sanguinis. By-and-by you may see them approach the granular spheres and vigorously butt and attack the periphery of the latter. In course of time one of the little flagella enters the sphere and coiling up comes to rest therein. If you keep such a sphere under observation for a little longer you will find that this act of impregnation—for such it is—is followed after five or ten minutes by gradual changes in shape. It tends to become oval and the pigment tends to accumulate at one pole of the oval body. Later the opposite end of the oval becomes elongated into a sort of beak or proboscis, hyaline and glistening as if composed of some dense substance. When the little body has assumed this shape, which it may do in some 10 minutes, it begins to acquire movement. The movement increases in vigour and then the parasite tumbles about through the liquor sanguinis in a screw-like, wriggling fashion, travelling about all over the field of the microscope. If it comes into contact with a white or a red corpuscle it will pass through it. Obviously this tumbling vermicule is endowed with great powers of penetration, powers which have, depend upon it, a definite purpose in view. These valuable observations, which have now been many times confirmed, we owe to an American worker—MacCallum. What is the purpose of this travelling vermicule?

Many years ago King in America and others too numerous to mention suspected that the mosquito had something to do with malaria, but in what way they could not say. Not only civilised observers had this suspicion but the savage natives of certain tropical countries had the same idea. Koch tells us that certain natives of German East Africa who lived in a mountainous, and therefore non-malarial, part noticed that when they descended to the malarial regions on the coast that they acquired a fever which they called "mbu." They said that they were bitten there by certain insects which they also called "mbu"—mosquito or gnat. They give the same name to the mosquito and to the fever, therefore, obviously these savages associate the insect and the fever as cause and effect. Peasants in certain parts of Italy have the same idea, believing that the bite of the mosquito may be followed by the development of malarial fever.

Laveran some years ago, in one of his numerous works on malarial fever, said that possibly the malarial parasite was cared for by the mosquito in the same way that the latter cares for the filaria of the blood. He did not, however, formulate a definite theory on the subject.

In 1894 I was engaged in working at malaria, following out Golgi's work and that of other Italians. I was particularly struck by the phenomena of exflagellation and more particularly by the fact that it occurred only when the blood had been removed from and was outside the human body. I reasoned that if this exflagellation occurs only outside the body the purpose of the flagellated body must lie outside the human body, and that therefore the flagellated body must be the first phase of the malarial parasite outside the body, must be the first step that the malarial parasite takes in passing from one human host to another. There seemed to me to be a sort of logic in this. But how was the malarial parasite to pass from one human being to another? It was not provided while inside the human body with any organs of locomotion or penetration; as far as we know the parasite is never extruded in the excreta, neither does it habitually escape in hæmorrhages. Therefore, the idea of a spontaneous escape of the parasite from the human body had to be dismissed. I therefore concluded that some extraneous agency must remove the parasite from the human body, so as to afford the opportunity for this flagellation which I had concluded must constitute the first step in its extra-corporeal life. In casting about for an organism which could effect this removal I, for many reasons similar in some respects to those that influenced the savage African, the Italian peasant, King, Laveran, and others, came to the conclusion that the medium of removal and transit must be the mosquito. I was so impressed with the probabilities of this double hypothesis and with its extreme practical value, should it prove to be correct, that I endeavoured to leave England for a time and to visit British Guiana or some such suitable malarial country where I might work out the idea. Unfortunately, that could not be accomplished, so I published my theory in the hope that it would appeal to someone who might enjoy the opportunities denied to me. At that time Surgeon-Major Ross was at home from India and we had many conversations on the subject. I described to him my hypothesis, the probabilities of which and the possibilities of which powerfully appealed to his highly logical and practical mind. He undertook, when he returned to India, to do his best either to establish or confute it. Accordingly he set to work in India experimenting with mosquitoes and malaria.

Ross was stationed in Secunderabad, in the south of India, where there was abundant opportunity for experimental work—plenty of patients and plenty of mosquitoes. He got patients with crescent parasites in their blood and he got mosquitoes to bite them. He found that in the course of a few minutes after the blood had entered the insects' stomachs the crescent parasites proceeded to the formation of sphere and flagellated body. But he got no further. This experiment was repeated hundreds of times. Many of his preparations were sent to me, and I could confirm from them the accuracy of his statements on the subject. Ross was encouraged, for obviously we were on the right track. One day Ross, whose station had in the meantime been changed, caught some mosquitoes which had been feeding on a patient the subject of tertian malaria. He kept the mosquitoes and after a few days dissected them. He took the stomach out and placed it on a slip with a little salt solution, covered it with a cover-glass and examined it with a microscope. He was gratified to find lying amongst the transverse and longitudinal muscular fibres a number of spherical bodies, very sharply defined, and including a great many grains of intensely black pigment exactly like those of the malaria parasite. Ross was at once struck with the similarity. After years of labour he believed he had at last seen the malaria parasite in the tissues of the mosquito, where we reasoned it ought to be; and he was right. At a subsequent experiment on the malarial patient he found exactly the same bodies, and on dissecting several mosquitoes at different intervals of time he found that the parasite, which originally was six micro-millimetres in

diameter only, grew to 60 or 80 micro-millimetres, each parasite, notwithstanding its growth and the lapse of time, still containing the peculiar and most characteristic black pigment. Ross was now quite sure that he had found the extra-corporeal phase of the malarial parasite. Some of these preparations he sent home. I examined them and showed them to a number of friends in London familiar with the malarial parasite; they agreed with me, as Laveran also did, in believing that probably this indeed was the long-sought-for extra-corporeal phase of the malarial parasite. Ross at that time had great difficulty in getting opportunities for experiment on the human subject and in procuring proper mosquitoes. He found that the mosquitoes in which he had discovered these pigmented bodies were of a different species to those on which he had formerly experimented, and that in this circumstance lay the explanation of his lack of success earlier as well as the secret of his ultimate success. Failing to get sufficient opportunity for experimenting on human malaria he turned to bird malaria. He found that the sparrow of Calcutta, in a large proportion of instances, contained in its blood a malaria-like parasite. The malaria parasite of the sparrow—proteosoma—does not assume the peculiar halter-shape of the corresponding parasite of pigeons and crows; it does not embrace the nucleus of the red blood-corpuscle but fills the greater part of the corpuscle, thrusting the nucleus to one end. Ross procured a number of infected sparrows and let loose upon them a number of mosquitoes of a species belonging to the genus *culex*. These mosquitoes, after from one to ten days, he dissected and examined their stomachs. He found in the stomach-wall pigmented bodies exactly similar to those which he found in the stomach-walls of mosquitoes fed on human malarial blood. He found that they increased in size and in a week or ten days grew from six to 80 micro-millimetres in diameter. When they became of considerable size they protruded like warts from the surface of the insect's stomach and were included in a very definite capsule. At this stage the capsule was filled with a vast number of very minute rod-like bodies. These capsules, which now projected into the body cavity of the insect, being over-distended, ruptured and discharged the rod-like bodies into the body cavity of the mosquito. For a time Ross could get no farther than this. He could not find what became of the rod-like bodies. One day, in dissecting the head of a mosquito, he encountered two small trilobed glands the ducts from which united to form a main duct. The glands lay on either side of the head and the common duct he traced to the base of the proboscis of the mosquito. This was the salivary gland of the mosquito. He found that the cells of the gland contained rod-like bodies exactly like those which he had found inside the parasitic capsules in the stomach-wall. He concluded that somehow these "germinal rods" (for so he called them) had managed to find their way into the salivary gland of the mosquito. It immediately occurred to him that this might be the route by which the parasite escaped from the mosquito into its vertebrate host. No sooner had the idea occurred to Ross than he put it to the test of experiment. He selected a number of sparrows in whose blood he satisfied himself that there were no parasites and let loose upon them a number of mosquitoes which he had already infected with malarial parasites. He found after a week or ten days that the sparrows, which were experimented upon sickened and many of them died and in their blood he found the malarial parasite.

We now understand why the flagellated body is developed outside the human host: because its function lies outside the human host. We now understand why the flagella break away and enter the granular sphere: they impregnate it and start it on the road of development. We now understand why MacCallum's vermicule is beaked and endowed with powers of locomotion and penetration: that it may approach and penetrate the stomach of the mosquito. And we now know why the sporozoöites, the "germinal rods," enter the mosquito's salivary gland: that they may be injected into vertebrate issue and so pass the parasite from vertebrate to vertebrate.†

This is one of those fairy tales of science which people are inclined to doubt, but anyone who has worked at the subject and taken the trouble to go through the long series of preparations which have been sent home from India cannot for a moment have the slightest doubt that what Ross stated was absolutely true, and that not only for bird but for human malaria. So soon as the idea got abroad that the key to the way in which the malarial parasite is propagated had been found the Italians immediately set to work with renewed vigour and with the utmost skill. Almost at once they demonstrated that what happened in the case of Ross's sparrows happened also with the human subject: that the appropriate species of mosquito fed upon the human malarial subject and subsequently allowed to feed upon a non-malarial subject conveyed the malarial parasite and malarial disease, and that the appropriate species of mosquito belonged to the genus anopheles.

Lately, while in Rome, I had the opportunity of visiting the laboratory of Professor Grassi and of examining many of the preparations by which he had worked out for the malaria parasite what Ross had so brilliantly done partially for this and completely for the malarial parasite of the sparrow. The histological details I shall endeavour briefly to describe. In some of the preparations I could see quite easily in the lumen of the stomach the pigment-laden travelling vermicule—an elongated body distinctly coloured by the staining fluid employed. There could be no doubt that this vermicule evolved from the crescent body which originally the mosquito had ingested. I also saw in one preparation the vermicule entering the stomach-wall between two epithelial cells. In other preparations the little spherical body, with a well-defined outline and nucleus and containing a number of grains of black pigment, could be seen. In other preparations this body had grown and in its growth had carried before it the outer layer of the stomach-wall. In other preparations it had so grown that it appeared as a huge wart on the outer surface of the stomach. By special methods of staining it was shown how the germinal rods, or sporozoöites, were evolved. After the vermicule had entered the stomach-wall and the parasite had increased in size the nucleus fragmented, each fragment proceeding towards the periphery of the parasite, where it became surrounded by a minute spherical mass of protoplasm. After a time the fragments of the nuclei themselves began to throw out little chromatic masses which in their turn occupied the periphery of the little spherule that had formed, these in turn went on multiplying in the same way until the now relatively huge parasite was filled with a large number of spherules, each of which had its masses of nuclear matter arranged at the periphery. At a certain stage multiplication of spherules ceased, the rods I have mentioned appearing instead. Professor Grassi showed me sections of a salivary gland of an infected mosquito; in the cells of the gland were to be seen the sporozoöites. From this and much similar evidence there cannot be the slightest doubt that the mosquito acts the part of transmitting agent as well as definitive host of the malaria parasite.

This is a piece of knowledge of the utmost importance to mankind, for we know that malarial disease in tropical countries—which, after all, in the future will be the most important part of the world, seeing that they can produce more food than temperate countries and can therefore support a larger population—causes more deaths and more disposition to death by inducing cachectic states predisposing to other affections than all the other parasites affecting mankind put together. We know now in what way this parasite is acquired. Depend upon it, in time, in virtue of this knowledge, we will get enormous power over the disease and sooner or later we will be able to prevent the infection of man by the parasite. It is only a question of study and the application of the knowledge already acquired, only a question of money and perseverance and a little ingenuity, and these results will come. It may not be in 10 years or 20 years, but sooner or later the energies of a considerable portion of scientific mankind now being expended in endeavouring to devise means for preventing the infection of men with the malarial germ by the mosquito will bear valuable fruit.

You can readily understand that it is of great importance to be able to recognise the special species of mosquito which convey malaria. The effective species as regards human malaria belong to the genus anopheles; species of the genus culex are effective in the case of sparrow malaria. Fortunately, these two genera are easily recognised even by the amateur zoologist. If you find a mosquito clinging to the wall or other surface you can tell which genus it belongs to by its posture. If the body is struck out nearly at right angles to the surface on which the insect is resting it is an anopheles. If the body is almost parallel to the surface it is a culex. There is another test which is easily applied if you have a pocket lens; in culex the two organs known as

palpi are rudimentary and very short; whereas in anopheles those organs are almost as long as the proboscis. It should be remembered that the male mosquito is not a blood-sucker and therefore is not dangerous. It is the female anopheles which transmits the disease. The mosquito larvæ inhabit stagnant or slow running water. If a mosquito larva be found with its head downwards, the body hanging at right angles to the surface of the water, it is a culex; if the body lies parallel to the surface of the water, it is an anopheles. There are other points of difference with which I need not now trouble you; those referred to suffice for diagnosis between the innocuous and the dangerous mosquitoes.

The facts regarding the malaria parasite which I have described are of great importance for many reasons. First, because they help us to understand the pathology and etiology of malaria. Secondly, they help us in diagnosis. Without an accurate knowledge of the characters of the malarial parasite precision in the diagnosis of malarial disease is difficult, in not a few cases it is impossible. With an accurate knowledge of the microscopical appearances of the malarial parasite diagnosis is absolutely assured. Thirdly, our knowledge of the parasite is invaluable in directing treatment. Good treatment depends on accurate diagnosis in many cases; if diagnosis be not accurate, energetically directed treatment may be wrong and even fatal. Accurate diagnosis of malarial fever can at times be assured only by the microscope and knowledge of the habits and appearances of the parasite. It is important in some cases to know when to give quinine in the course of malarial fever; especially is it so in that type of malarial disease known as "blackwater fever." Quinine under certain conditions tends to induce hæmoglobinuric symptoms; but it does not tend so powerfully to induce hæmoglobinuric symptoms as does the malarial parasite. Therefore when it comes to a choice between two evils we choose the lesser and give quinine. But if you give quinine to a patient who has not the parasite in his blood you expose your patient to an unnecessary and very grave danger. Only the microscope can tell you if in any given patient the malarial parasite is present or not. Lastly, a knowledge of the life-history of the malarial parasite is of extreme value for the prevention of malarial disease, for could we by mechanical or other arrangements prevent the mosquito attacking the human body we could prevent the malarial parasites from entering the human body; or if we could abolish the mosquito by drainage or other means from a country then we might be sure that we would abolish the malaria of that country also.

Attempts are being made to solve these practical problems. At the present moment such attempts are being actively made in Rome by Professor Celli and elsewhere by others. I have no doubt that in the course of a few years we shall get some very valuable results in this direction and that, thanks to this new-born knowledge about the malarial parasites, better times are rapidly approaching for malarial countries.

THE EAST SUBURBAN MEDICAL PROTECTION AND MEDICO-ETHICAL SOCIETY, LIMITED.—A quarterly general meeting of this society was held in the Town Hall, Stratford, E., on May 3rd.—DR. FRED. J. SMITH took the chair and DR. A. G. BATEMAN read a paper on Medical Defence, in the course of which he pointed out the liability of every member of the profession to attacks by unscrupulous persons and the immense advantage of being defended in these cases by a powerful association like the Medical Defence Union. The work of indirect or impersonal defence could be carried on by various societies, although in his opinion the whole of this work ought to be taken over by the British Medical Association; but for direct or personal defence a powerful organisation with special skill and experience, such as the Medical Defence Union placed at the service of its members, was absolutely necessary. The speaker touched upon actions for malpraxis, libels upon medical men, x-ray photographs as evidence in court, threatened proceedings in connexion with lunacy certificates, friendly society appointments, and many subsidiary subjects, illustrating his remarks by examples from the case-books of the Medical Defence Union. He also referred to the difficulty of taking cases of "covering," &c., before the General Medical Council owing to the unsatisfactory position of that tribunal, which could not summon witnesses by subpœna, administer the oath to witnesses, or award costs to either side.

An Address

THE MODERN TREATMENT OF DIABETES MELLITUS.

Delivered before the Annual Meeting of the Gloucestershire Branch of the British Medical Association at Cheltenham on May 15th, 1900,

BY ROBERT SAUNDBY, M.D. EDIN., F.R.C.P. LOND., LL.D.,

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MR. PRESIDENT AND GENTLEMEN,—I am greatly honoured by your invitation to visit your beautiful town and to address you upon a subject so interesting and important as diabetes must be to all of us.

PHYSIOLOGICAL FOREWORD.

If I discuss the question mainly from the point of view of the practitioner and refer only to such experiments as throw light upon our clinical observations I must not be thought to be unregardful of the work which for 50 years has been ungrudgingly bestowed upon the problems of diabetes. But as few of the questions raised have been so definitely settled as to form an unquestionable basis for practical conclusions it would be out of place to take up your time by discussing them. A very brief outline of our physiological knowledge must suffice.

Under normal conditions the liver stores up in the form of glycogen or animal starch the carbohydrate material taken into the body as food. By means of a regulating mechanism it converts this glycogen into sugar and passes it into the circulation in such quantities and at such times as required by the tissues. Under abnormal conditions these functions are upset; the liver no longer stores glycogen but allows the whole of the carbohydrate food to pass directly into the circulation as sugar while any stored glycogen is converted and discharged at once. This is what occurs after many experimental injuries of the nervous system, of which the best known is Claude Bernard's puncture of the floor of the fourth ventricle, and also in consequence of falls, blows on the head, back, or abdomen, shock, the action of certain poisons, &c. The resulting glycosuria is usually temporary but in some of the surgical conditions referred to confirmed diabetes follows.

THE THEORY OF DIABETES.

These traumatic effects appear at first sight to supply a satisfactory basis for the foundation of a theory of diabetes in which the essential cause would be the derangement of the glycogen-storing function of the liver and the *causa causans* the bodily or mental shock or other *noxa* to which the disturbance could be immediately attributed. But the theory is inadequate because any accumulated stores of glycogen are dissipated very rapidly and thereafter the supply of sugar must depend solely upon the carbohydrates introduced as food. Moreover, if the body continues as before to consume sugar a good deal that reaches the circulation must be destroyed and the glycosuria should occur only after a full carbohydrate meal and should then rapidly disappear, but in all severe cases of diabetes the withholding of carbohydrate food fails to stop the excretion of sugar. The latter phenomenon has been partly explained by the fact established by Pavy and others that the albuminous molecule while undergoing decomposition into urea, water, and CO_2 splits off a carbohydrate molecule from which sugar is formed. The resulting sugar and urea bear a definite relation to one another, so that if we know the quantity of urea excreted in 24 hours we can calculate the amount of sugar formed in the body from the decomposition of albumin. The proportion is roughly about one part of urea to two parts of sugar, so where the total output of urea is 500 grains there are 1000 grains of sugar to be accounted for. Yet if the tissues continued to consume a normal proportion of sugar all of this should be used up in the body, so that it has been found necessary to amplify the above-stated theory by postulating a further failure of the sugar-destroying

function of the tissues. This hypothesis has been established upon a basis of fact by the researches of Professor Bouchard, who has worked out the consumption of sugar in health and in diabetes. He has shown that the quantity varies with age and body weight, slender young persons consuming a much larger proportion of sugar per kilogramme of body-weight than those who are older and fatter, an observation which by itself throws light upon the tendency to diabetes observed in elderly obese people.

Table (modified from Bouchard) showing the Consumption of Sugar in the Bodies of Healthy Persons at Various Ages and of Different Weights. (The figures have been converted into English measures.)

Age.	Weight.	Consumption of sugar per pound of body-weight.	Total.
17 years	101 lb.	54 grains	5450 grains
25 ,,	130 ,,	42 ,,	5460 ,,
40 ,,	103 ,,	41 ,,	4223 ,,
60 ,,	170 ,,	13 ,,	2060 ,,
70 ,,	111 ,,	24 ,,	2664 ,,

But he has also calculated the amounts of sugar consumed per kilogramme of body-weight by a number of diabetic patients and has compared the results with the figures obtained from normal individuals of the same age and weight, the conclusion being that all diabetics exhibit a very considerable reduction of their sugar-consuming power. If we take 1 as the normal standard of sugar consumption his diabetic cases showed only 0·05, 0·10, 0·11, 0·16, 0·19, 0·42, and 0·51. It will be noticed that in the last of the series only was the sugar-consuming power equal to half the normal amount, while in the others it dropped so low as to an eighth, a tenth, and even a twentieth. These careful and original observations, made, it may be remarked, not upon animals but upon human beings by a practising physician, are generally held to have settled this previously much-debated question. Those who maintain that diabetic patients consume a normal amount of sugar must explain whence they get it, as on ordinary strict diabetic diet the total amount of sugar, including that derived from the decomposition of albumin, amounts to little over 2000 grains, and yet upon that diet these patients increase in weight and excrete a certain amount of sugar.

It is not quite certain how the tissues come to lose, partially at all events, their power of assimilating sugar, but there seems to be reason to believe that it is directly caused in some way by the excess of sugar which reaches them. When this quantity is restricted by careful diet many diabetic patients show after some time an increase of sugar-destroying power; and conversely others who at first preserve a fair amount of this faculty so that they can safely take limited quantities of starchy food, if they become careless of keeping strictly within the prescribed amounts and neglect the necessary precaution of occasional "carbohydrate fasts," develop thirst and polyuria and manifest a greater intolerance of starchy food than existed when they first came under treatment. We have therefore arrived at the conclusions that under the influence of certain agencies, some of which have been alluded to, but will be described more fully in the next section, the liver loses its power of storing glycogen; in consequence the tissues, gorged with sugar, suffer a diminution of their power to consume that substance; and, finally, glycosuria ensues which becomes persistent and increasing unless arrested by treatment.

PATHOGENESIS.

Countless experiments have so multiplied the possible agencies by which the above described functions of the liver can be disturbed that we may expect to find sugar in the urine in affections of many and most distantly related parts. Most of these cases, however, are merely examples of temporary non-diabetic glycosuria and need not detain us, but there are three principal organs to which upon more or less important grounds we look for the seat of the original mischief to which the functional disturbance of the liver must be attributed. These are the nervous system, more especially the brain, the medulla oblongata and vagi, the pancreas, and the liver.

DIABETES OF NERVOUS ORIGIN.

Ever since Claude Bernard's brilliant experiment the nervous origin of diabetes has held a foremost place in medical opinion and for a long time has occupied the field to the exclusion of all other doctrines, in spite of the parsimony with which morbid anatomy supplied any facts in its support. From the latter point of view, indeed, there has been little to encourage the opinion, for, saving a few examples of tumours chiefly in the fourth ventricle or upon the vagi nerves, nothing that could stand criticism has been discovered. The facts in its favour, apart from the presumption afforded by experiments upon animals, are to be found in our clinical experience. We should put in the first rank of this sort of evidence the cases of diabetes which follow traumatisms, with or without organic injury to the nervous centres, but always attended by severe shock. With these Professor Senator would class the cases originating in non-traumatic neurasthenia, assigning all alike to the functional disturbance of the nervous system. In the second place, closely allied but somewhat less definite, are those cases, in favour of which there is an overwhelming concurrence of clinical evidence, where the disease sets in in consequence of over-study or during the strain of a crisis in business or sickness or war. Thirdly, we have the well-known fact that the disease is much more common among the educated than the uneducated classes—that is, it occurs chiefly among those whose nervous systems undergo more wear and tear. Four years ago Dr. A. E. Smith read a paper before the New York Academy of Medicine in which he sought to show that engine-drivers suffer as a class disproportionately from this disease, and he attributed this, in part at least, to the anxious nature of their work. My inquiries from railway surgeons did not reveal that any such opinion had been suggested by their experience, but my friend Mr. Herbert Page very kindly placed at my disposal the causes of death of the engine-drivers of the London and North-Western Railway Company for a number of years, and upon comparing these with a similar number of deaths among the general population at the same period of life the mortality from diabetes of these men turned out to be nearly twice as great as that of the general population.

Class.	Age.	Mortality from diabetes per 10,000 deaths.
General population	30 to 60 years.	80
Engine-drivers	30 ,, 60 ,,	130

I do not wish to insist too much upon these figures, but so far as they go they support Dr. Smith's conclusions and are in favour of the nervous origin of diabetes, even if we must include among them a certain number of cases due to injury and shock.

PANCREATIC DIABETES.

Since von Mering and Minkowski proved conclusively by their splendid series of experiments that the entire removal of the pancreas in dogs is invariably followed by all the symptoms of severe diabetes the anatomical changes in the pancreas upon which Lancereaux had insisted for many years previously acquired the first degree of importance. The lesions observed vary, the most common, but not the least obscure, being that which is usually described as atrophy or fibroid degeneration. This process seems to be one of interstitial inflammation with increase of connective tissue and gradual destruction of the glandular acini. Nothing certain is known as to its origin, but analogy with similar familiar processes in the liver suggests that it may be due to attacks of infectious disease. Diabetes is well known to be an occasional sequela of infectious diseases, but it has not been established, so far as I know, that the pancreas in these cases is always involved, and it cannot be considered impossible that in certain instances the nervous system may be at fault. Besides fibroid atrophy we meet occasionally with complete fatty degeneration of the pancreas, the consequence of atheroma of its nutrient vessels or perhaps of a more acute pancreatitis, and occasionally, too, with cystic dilatation of the duct and secondary wasting of the gland from calculous disease, where there is generally a history of attacks of colic due to the passage of pancreatic calculi. A case has been recently recorded in which complete necrosis of the pancreas was caused by a perforating

gastric ulcer of the posterior wall of the stomach which set up diffuse inflammation followed by the formation of an abscess. The abscess was opened and the pancreas was discharged in a state of necrosis through the opening. The patient recovered from the operation but remained permanently diabetic. Lastly, a good many cases have been published of cancer of the pancreas associated with diabetes.

It must not be assumed that disease of the pancreas is invariably attended or followed by diabetes. It is very well known that this is not the case, and the explanation afforded by Minkowski's experiments is complete. These showed that if even a small portion of the tail of the pancreas was left behind diabetes did not follow the operation of removing the rest of the organ. The physiological relation of the pancreas to the glycogenic function of the liver still remains to be elucidated. The theory at present provisionally accepted is that the pancreas forms an internal secretion which normally inhibits the discharge of glycogen from the liver. What proportion of cases of diabetes is due to pancreatic disease is also still unsettled. The estimates vary from one-third to two-thirds of the whole number, but in any case there are many which must be explained in some other way.

HEPATIC DIABETES.

In spite of the well-known relation of the liver to sugar formation the dependence of diabetes upon any definite hepatic lesion is by no means satisfactorily established. I have recorded several cases of glycosuria associated with hypertrophic cirrhosis of the liver, but, as I have elsewhere pointed out, in these the glycosuria appears to depend rather upon the alcoholic habit than upon the anatomical change. The condition described by Hanot as "bronzed diabetes," in which there is pigmentary cirrhosis of the liver associated with bronzing of the skin and glycosuria, is, as Marie contends, more probably a peculiar form of cirrhosis of the liver associated with glycosuria than a complication of diabetes. I have also met with glycosuria in some cases of hepatic abscess, but there is no constant relation between the two conditions. When I was pathologist to the General Hospital I made a post-mortem examination of the body of a man who had suffered from what was called diabetes and in his liver there was a very large abscess. I could learn very little about his clinical history except that the case had been regarded as one of diabetes presenting no special features. I have never had a similar case under my own care. Pavy has recorded a case of diabetes which followed a kick from a horse over the region of the liver. Some degree of enlargement, increase of connective tissue, or fatty degeneration has often been observed in diabetic livers, but no constant or marked change is present. However, I think it may be allowed to be probable that there is a group of cases to which the term "hepatic diabetes" may be provisionally applied.

DEFINITION AND DIAGNOSIS OF DIABETES.

It is not easy to furnish a clinical definition of diabetes which is both accurate and comprehensive. Probably we cannot say more than that it is a persistent or recurrent glycosuria which sooner or later is accompanied by thirst, polyuria, and failure of nutrition. Such a definition has the obvious disadvantage that in the presence of a given case of glycosuria we may be unable to say for some time whether it will or will not prove to be diabetes. Unquestionably there are cases of glycosuria which by their short duration, the absence of other symptoms, and their subsequent freedom from any unfavourable result should not be called diabetes, which is a term carrying with it so much that is ominous for the patient's future. On the other hand, diabetes presents itself under very different degrees of gravity; all the symptoms, including the glycosuria, may disappear for a time and then return in the most malignant form; or, finally, the disease may last for years without getting sensibly worse, yet without warning or after some trifling disturbance of mind or body it may terminate by diabetic coma. I could give many illustrations of these changes. For example, a young medical practitioner suffered from thirst and found sugar in his urine after a bicycle ride on a hot day in the summer of 1898. He put himself under treatment and the sugar rapidly disappeared. When I saw him there was none, but he was anxious to do the best for himself, so I sent him for a rest and cure to Neuenahr and he afterwards went to Switzerland. On his return he seemed quite well, and he did his winter's work without flagging. In the early summer he paid a second visit to Neuenahr and returned to his work feeling very well. A little later his symptoms returned, he lost weight, and when I saw him again he was passing some 1500 grains of sugar in spite of careful diet, and in the following September he died. I remember a similar case where the interval of what seemed to be perfect health lasted two years and then under a special strain of work in business the patient, a young man, broke down and after a few months died from coma. I have known many cases of elderly diabetics who have been going on well until some day breathlessness has come on after a little extra exertion and death has followed in a few hours. On the other hand, we see cases of glycosuria which look very like diabetes, and I think it is not unfair to suspect that most, if not all, of the examples of the cure of diabetes which are attributed to this or that drug really belong to this category, for there is an absolute consensus of opinion among those who have most experience of this disease that no drug hitherto suggested has any definite influence upon its course. I have recently published a lecture upon non-diabetic glycosuria and to that I must refer you for illustrations. There is no doubt of their existence and where we can learn the cause and remove it, as, for example, in alcoholic glycosuria, we can effect what looks like a very remarkable cure.

The lesson which it is desirable to learn is that we must not be content to call every case of glycosuria "diabetes" or to place such patients straightway upon a routine course of treatment, but our opinion must often be suspended and the case meanwhile studied. Unfortunately, cases are common enough in which the severity of the symptoms makes the diagnosis only too plain. I do not wish to detain you by discussing methods of examining the urine, but I cannot help repeating the warning often given that the reduction of copper does not necessarily mean sugar. Where the absence of other symptoms or any other circumstance suggests a doubt the urine should be filtered seven or eight times through animal charcoal to remove other reducing substances and the copper test repeated with the filtered urine. If it is decided that sugar is present the next step is to determine not merely the percentage of sugar but the total amount excreted in 24 hours. This is done by collecting the urine of the 24 hours, measuring it, and estimating the percentage of sugar; then by very simple arithmetic we can calculate the total loss in grains. If the patient has not been under treatment this will pretty certainly amount to thousands of grains. For example, a patient passing 100 ounces of urine containing 5 per cent of sugar is losing over 2000 grains of sugar daily.

TREATMENT.

The diagnosis being settled, the daily excretion of sugar determined, and the patient's weight noted, we should seek to ascertain the effect of withdrawing all carbohydrate food as a preliminary to the settlement of the very important question, How much carbohydrate food does the patient still retain the power to assimilate? For it is no longer believed that all diabetic patients have completely lost the power of utilising carbohydrates. The late Professor E. Külz, to whom we are indebted for so many valuable observations upon diabetes, found only two instances out of a long series of cases examined by him in which this power was totally lost.

In drawing up a diet table attention must be paid to quantity as well as to quality, for it is more than probable that such untoward results as are alleged to have sometimes followed the use of strict diabetic diet were due to excessive quantities of albuminous food. According to Rübner a man consumes the following quantities in 24 hours for each kilogramme (2 lb.) of body-weight: during repose, 32·9 heat units; on slight work, 34·9 heat units; on moderate work, 41·0 heat units; on hard work, 48·0 heat units. So that a person weighing 10 stones (70 kilogrammes) on slight work requires daily an alimentary value of 2450 heat units. In addition a diabetic subject must receive a quantity equal to the sugar which he excretes unconsumed, which in the case of a patient excreting 1500 grains would be 400 heat units, or a total of 2850 heat units. The usually accepted heat values of the ordinary elements of food are, roughly: for one gramme of albumin, four heat units; for one gramme of carbohydrates, four units; for one gramme of fat, nine units; and for one gramme of alcohol, seven units. The following are the values in heat units of various articles of

food converted into familiar English measures from a table constructed by Weintraud:—

Meat, per ounce	35·0	heat units.
Eggs, each	75·0	" "
Milk, per ounce	17·7	" "
White bread "	75·0	" "
Toast "	75·0	" "
Cheese "	117·0	" "
Butter "	240·0	" "
Fat "	270·0	" "
Cream "	60·0	" "
Light wine (clarets) per half pint	50·0	" "
Whisky per ounce	105·0	" "

I append an example of an average diet constructed on this system for a patient requiring 2400 heat units or thereabouts:—

Six ounces of cooked meat	210	heat units.
Two ounces of fat bacon	540	" "
Two eggs	150	" "
Two ounces of cream	120	" "
Three ounces of butter	720	" "
Three ounces of cheese	351	" "
Six ounces of green vegetables, say	80	" "
Nine ounces of Callard's brown loaf, biscuits, and sponge-cakes	50	" "
Half a pint of bouillon	00	" "
One pint of tea	00	" "
Half a pint of claret	50	" "
Two ounces of Scotch whisky	210	" "

This would give 2450 heat units. The various articles are arranged so as to form breakfast, luncheon, tea, and dinner, but these are details which can be modified at pleasure if we bear in mind that it is better to make the three principal meals nearly equal, thus avoiding overloading the stomach by too much food at any one time. The food allowed is as far as possible free from carbohydrates, the total amount contained in the green vegetables and bread substitutes not exceeding 500 grains of sugar-forming material. Callard's brown loaf, diabetic biscuits, and diabetic sponge-cakes contain only traces of carbohydrates or none at all, and the green vegetables contain amounts varying between 10 and 20 per cent. Protene diabetic bread made by the Protene Food Company is also very free from starch. It is necessary to mention the makers' names because even well-made gluten bread contains from 25 to 40 per cent. of starch and many so-called "diabetic" breads and biscuits show a much higher proportion. I append some analyses which I have had made to illustrate these statements.

Analyses of Diabetic Bread Substitutes.

Name.	Carbohydrates calculated as glucose.
Callard's brown loaf	6·75 per cent. (29·4 grains per ounce).
Callard's biscuit	6·6 " " (28·4 " " " ")
English gluten bread	28·4 " " (127·0 " " " ")
French gluten bread	36·78 " " (156·0 " " " ")
Protene diabetic bread	2·7 " " (11·7 " " " ")

At the end of a week of this diet the urine should be again collected, the total sugar and urea estimated, and the patient's weight recorded. If the urine is free from sugar the patient has used up, not only some 500 grains of sugar derived from the carbohydrates in the food but also an amount equal to twice the quantity of urea excreted. If we suppose the latter to be 500 grains we should have 1500 grains of sugar utilised by the tissues. On the other hand, if he is passing a certain amount of sugar it is only necessary to subtract this from the total derived from the carbohydrates and albumin in order to show the proportion consumed. Unless the sugar has entirely disappeared it is advisable to maintain the diet unaltered for several weeks, repeating the examination of the urine and the weighing every week or every fortnight at least.

Loss of weight may not be an undesirable result if the patient is decidedly too fat, but under other circumstances it should lead to a careful revision of the diet. It may be found that the patient is not carrying out instructions or there may have been some mistake in the construction of the diet. Where the sugar has entirely disappeared small additional quantities of carbohydrate food should be allowed. No positive rules can be laid down which are applicable to all patients, for experience proves that individuals differ in their power to assimilate different forms of carbohydrate. Speaking generally, milk may be allowed in moderate quantities not exceeding a pint. A pint of milk contains about 400 grains of lactose and 300 grains of fat. It affords 350 heat units and may in some cases with advantage replace some part of the solid fatty food which patients often find difficulty in eating. In this respect we are at a disadvantage as compared with our German colleagues, for German cooks are accustomed to use large quantities of butter in cooking vegetables, and salad made with oil and fat bacon (Speck Salat) is an ordinary article of German diet. Lævulose or left-handed fruit sugar in quantities not exceeding one to one and a half ounces is also very frequently readily assimilated. A considerable proportion of the sugar of apples is lævulose, so that an apple raw or baked may be tried. Lævulose itself is prepared by Schering and Glatz of Berlin, but it is dear and only slightly sweet so that it is little use as a sweetening agent. For this purpose saccharin should be prescribed. I have repeatedly read that saccharin causes stomach derangement, but we have had a pretty long experience of saccharin in England and that seems to be generally favourable. I do not remember to have noticed any reports of bad effects observed from its use, and considering the number of non-diabetic persons who use it habitually as a substitute for sugar in the hope of counteracting an unfashionable tendency to plumpness we ought to have heard of these injurious effects if they commonly occur. I cannot say anything about dulcin and it seems to be useless to make experiments with a comparatively unknown substance when we possess one of well-tried safety and utility. Of other fruits which contain very little sugar may be mentioned oranges (about Christmas time), cherries, apricots, cranberries, and bilberries. Kraus, jun., of Carlsbad, has invented a method of preparing fruit for diabetics by repeated stewing in successive portions of water which are then thrown away and a little saccharin with cloves or cinnamon added to the fruit to restore to it some degree of flavour. Such fruits contain only a low percentage of sugar and can be obtained in London. The following analyses were made for the *British Medical Journal*[1]:—

Analyses of Preserved Fruit Prepared by Mr. E. Blatchley of 17, Oxford-street, London.

Fruit.	Percentage of reducing substance present (after inversion) calculated as glucose.
Plums	2·65 per cent.
Gooseberries	1·96 "
Cherries	3·35 "

Undoubtedly, the greatest difficulty in the feeding of diabetic patients arises from the need to deny them both bread and potatoes. As already explained, the various bread substitutes are not entirely satisfactory, for those that contain little or no starch are not very palatable, while the more pleasant they are to the taste the larger quantity of starch they are sure to contain. Besides they are by no means inexpensive, and while quite beyond the reach of the poor their cost is a matter of some consideration to all persons of moderate means who have many demands upon their incomes. The best white bread contains about 63 per cent. of starch and coarse brown bread about 50 per cent., and if we allow the very moderate quantity of an ounce three times a day we are giving 600 or 700 grains of sugar-forming substances, and it is to be feared that few patients would be content to use so little. If we give toast instead of bread this contains about 1000 grains of sugar-forming material, which is more than many patients can tolerate.

Can anyone tell me why patients are so often allowed to eat toast without limit, as if toasting bread in some way deprived it of its starch, whereas all that the heat can effect is to destroy so much as is actually burnt, and, weight for weight, toast contains a much higher percentage of starch than bread? Yet while toast is so frequently allowed I invariably find that potatoes have been most rigidly forbidden, although they contain only a small percentage of starch, 15 per cent. for new potatoes and 20 per cent. for old. Thus, six ounces of potatoes would not contain much over 400 grains of sugar-forming carbohydrates. No doubt the actual percentage of starch is not an absolutely trustworthy guide to the assimilability of different articles of food, for, as already remarked, diabetic patients exhibit

[1] 1899, vol. i., p. 606.

marked individual peculiarities in this respect, but as a rule potatoes are tolerated better than an equivalent quantity of bread, by which I mean a quantity of bread containing the same amount of carbohydrates, and as the bulk of potato is three to four times as great it presents undoubted advantages. Six ounces of potatoes are quite enough for at least one meal and with the other permitted articles of diet would enable the patient to dispense altogether with any bread substitutes.

Bread is best given in the form of toast. Toast contains about 320 grains of sugar-forming carbohydrates per ounce and must therefore be given with caution; from an ounce to an ounce and a half is as little as a patient can do with at a meal, so that we see he may easily take the equivalent of 1000 or 1500 grains of sugar in a day, and unless his capacity for assimilating sugar is pretty good he is better without it.

Alcohol should be generally prescribed in the form of Scotch whisky or the light wines of France and Germany. Scotch whisky generally contains no sugar and, as has been seen, has a high heat-giving value, but it should not be allowed where there is any gastric disturbance, such as is frequently present in elderly diabetics; for these it is much better to use the light wines of France and Germany diluted with mineral water. As a rule we should not yield to the desire of our patients to drink beer unless they will be content to take it in the form of Harvey's Sugar-free Pale Ale. Ordinary bitter beer contains about 500 grains of sugar per pint, which is of course not a very large amount if the patient is willing to give up an equivalent amount of other carbohydrate-containing food, but it is often neither possible nor desirable for him to do this.

If we are to proceed safely in making these additions to the diet of our patients we should be careful to allow each of these "extras" separately and to yield no further until the result has been ascertained by careful analysis of the urine. When the patient has a sufficient diet we should do well to maintain a sternly uncompromising attitude upon the question of further concessions. Even where the added articles of diet are quite well borne it is very necessary for their effect to be watched, and in order to check the accumulation of sugar in the body we should recommend our patients to submit from time to time to what have been already alluded to as "carbohydrate fasts"; that is to say, a patient should one day a week abstain altogether from the various extras which may have been allowed, and if at any time there seems to be a tendency for the sugar to rise strict diet should be taken for a week or two. It is only by such precautions that these indulgences can be permitted. The following tables are arranged as examples of what we may do on the ascending scale when we desire to add a certain amount of carbohydrates:—

B Diet.	Heat units.	Carbohydrates in grains.
Two ounces of bacon	540	—
Three eggs	225	—
Two ounces of butter	480	—
Two ounces of cheese	350	—
One pint of milk	354	400
Six ounces of cooked meat	210	—
Six ounces of Callard's bread, &c.	50	175
Six ounces of green vegetables	50	250
Six ounces of potatoes	100	500
One pint of tea	0	0
Half a pint of bouillon	0	0
Totals	2359	1325
With half a pint of claret (50)	2409	
With two ounces of whisky (210)	2569	

If the above diet is tolerated we may proceed to the next:—

C Diet.	Heat units.	Carbohydrates in grains.
Two ounces of fat bacon	540	—
Three eggs	225	—
Two ounces of butter	480	—
Three ounces of cheese	350	—
One ounce of cream	60	—
One pint of milk	354	400
Six ounces of cooked meat	210	—
Six ounces of green vegetables	50	250
Six ounces of potatoes	100	500
Four ounces of toast	372	1276
Two ounces of Callard's sponge cakes	50	—
Four ounces of fruit	10	40
Half a pint of bouillon	0	0
One pint of tea	0	0
Four ounces of coffee	0	0
Totals	2801	2466
With half a pint of claret (50)	2851	
With two ounces of whisky (210)	3011	

In determining the value of these diets we must not be content merely to judge by the effect upon the urine, for it is quite natural that where the carbohydrates are increased there should be a greater excretion of sugar. The point is whether the patient is assimilating a considerable proportion of the carbohydrates allowed. The following cases are fairly comparable and serve to show how very differently these diets may act.

CASE 1.—A man, aged 34 years, was admitted to the hospital on Dec. 8th, 1899, complaining of loss of flesh, polyuria, and thirst of six months' duration. He was passing about 1200 grains of sugar per diem. As his weight was 116 pounds he required for that a diet containing 2030 heat units and in addition for the 1200 grains of sugar which he was excreting he required 320 heat units, being a total of 2350. He was allowed A diet with two ounces of whisky which afforded 2400 heat units and contained certainly not more than 500 grains of carbohydrates. Upon this diet he excreted on an average about 800 grains of urea, so that from the decomposition of albumin he manufactured 1600 grains of carbohydrates in his body in addition to the 500 taken as food, supplying a total of 2100 grains which went to his tissues for consumption. During the same time he excreted an average of about 700 grains of sugar, so that he consumed the balance of 1400 grains. According to Bouchard's table this man in health would consume over 4000 grains of sugar. By Dec. 18th he had gained four pounds in weight and was then allowed in addition six ounces of potato estimated to contain 500 grains of starch and worth about 50 heat units. His urea excretion remained about the same, so that he had now 1000 grains of sugar derived from the carbohydrates of his food and 1600 derived from the albumin, or a total of 2600 grains. The sugar excretion remained also about the same, nearly 800 grains, so that upon this diet he assimilated 1800 grains, as against 1400 with the smaller quantity of carbohydrates. By Dec. 26th he had gained another four pounds and therefore was allowed four ounces of toast which contained 1276 grains of starch. Upon this diet the total carbohydrates amounted to 2026 grains, the amount of urea diminished to about 520 grains per diem, making an average of 1040 grains of carbohydrates manufactured from the albumin of the food. The total, therefore, of sugar supplied to the tissues was 3066 grains; of this he excreted about 900 grains, so that he assimilated 2166. The toast was then omitted from the diet. The result of this was to diminish the sugar excretion to a little over 400 grains, but as the total of sugar derived from carbohydrates and the albumin of the diet did not amount to more than 2000 grains he was not assimilating more than 1600. If you have been able to follow this you would see that he actually assimilated the least sugar upon the strictest diet and the most sugar upon the most liberal diet, while the difference between the sugar excretion on A diet (525 grains) and upon C diet (824 grains) was not so very great. By Jan. 13th, 1900, the patient had gained in all 14 pounds, and he left the hospital at his own request, having been in little more than a month. The next case to which I wish to draw your attention is an exact converse.

CASE 2.—The patient, a man, aged 39 years, was admitted into the General Hospital on Feb. 16th, 1900, complaining of thirst, weakness, and polyuria. He weighed 127 pounds and was passing about 800 grains of sugar daily, for which he required a diet containing about 2400 heat units. He was allowed diet A without alcohol or cream, which was really not sufficient for his needs as it contained only 2070 heat units. He excreted upon this diet about 800 grains of urea, which would furnish about 1600 grains of sugar, and there were 500 grains of sugar derived from the diet, making a total of

2100. Against this he excreted about 200 grains, leaving 1900 grains which must have been consumed in his body. His normal consumption of sugar would be over 5000 grains. By Feb. 24th, in spite of the diet being rather short, he had gained three pounds and was then allowed in addition six ounces of potatoes and a pint of milk, which would be worth another 250 heat units and would furnish about 900 grains of sugar. Upon this diet he excreted only 600 grains of urea, so that we have 2600 grains of sugar to account for. But he excreted 930 grains of sugar, so that he assimilated 1670 grains. By March 3rd he had gained four pounds, but the sugar having gone up he was put back to the A diet. Upon this he excreted 240 grains of sugar and 660 grains of urea, giving a total of 1580 grains of sugar consumed. By March 19th he had gained eight pounds. He was then allowed six ounces of potatoes. Upon this he excreted 850 grains of sugar and 700 grains of urea, so that he assimilated 1550 grains.

These figures show that this patient assimilated the largest quantity of sugar upon a dietary which was very poor in carbohydrates and hardly sufficient for his needs. We must recollect, however, that he was in bed and therefore required less than he would have done if he had been walking about.

CASE 3.—The patient, who was 18 years of age, was admitted to the General Hospital on Jan. 23rd, 1900, complaining of thirst, polyuria, and wasting of three weeks' duration. He weighed on admission 90 pounds and was passing over 2000 grains of sugar daily, so that he would require about 2200 heat units if he were going about and about 2100 when in bed. To supply this he was allowed diet A without alcohol or cream, which furnishes 2070 heat units and contains 500 grains of carbohydrates. Upon this diet he excreted about 700 grains of sugar and 500 grains of urea, showing that he assimilated about 1000 grains of sugar. His weight remained unchanged. His normal consumption of sugar would be 4860 grains. On Feb. 9th a pint of milk was added to his diet and upon this he excreted about 900 grains of sugar and 700 grains of urea, still showing an assimilation of about 1000 grains of sugar. On Feb. 13th he was given six ounces of potatoes daily. Upon this he excreted about the same quantity of sugar and 610 grains of urea, showing an assimilation of about 1700 grains of sugar. On March 5th he was allowed four ounces of toast upon which he excreted 1596 grains of sugar and 610 grains of urea. Here the carbohydrates derived from food amounted to 2676 grains, and those from the decomposition of albumin to 1220 grains, or a total of 3896. If we subtract from this the 1596 grains of sugar excreted we shall see that he was able to assimilate 2300 grains. In spite of this he did not gain weight and left the hospital after being in about nine weeks weighing no more than when he came. The only explanation which I can give of the failure of the diet to increase his weight in spite of the large amount of sugar assimilated is that the younger the patient the larger is the amount of sugar demanded by the tissues, so that although as great as, or greater than, that assimilated by the older patient it was all consumed and none stored up as fat. This shows the need there is in young patients for giving them a relatively richer diet and where possible a moderate allowance of carbohydrates. That patients can gain weight very satisfactorily upon strict diet is shown by the following case.

CASE 4.—A man, aged 28 years, consulted me in March, 1899. At that time he weighed 122 pounds and on strict diet excreted 144 grains of sugar. The diet which he was allowed gave about 2240 heat units, against 2168 which his weight and sugar excretion required. Upon this diet by June 28th he had gained 25 pounds and there was no sugar in his urine. He was then allowed to take potatoes and milk, his diet being estimated to contain 1500 grains of carbohydrates. His normal consumption of sugar would be 5460 grains. On this he passed about 100 grains of sugar daily and gained nine pounds in the next three months. Toast was added, so that the total carbohydrates in his diet were estimated to amount to 2700 grains. Upon this in three months he gained six pounds more, the daily excretion of sugar amounting to 240 grains. As in January the sugar showed a tendency to go up he was put back upon strict diet for a time, but the result of a year's treatment is a gain of 40 pounds and a corresponding improvement in health and strength. At the present time this gentleman is taking C diet, which affords him 2478 heat units and 2458 grains of carbohydrates. He is passing 55 ounces of urine containing 0·7 per cent. of sugar, giving a total of 169 grains of sugar, and 2·1 per cent. of urea, giving a total of 518 grains of urea. His tissues, therefore, are supplied with 3474 grains of sugar derived from carbohydrates and albumin in the food, and as he excretes only 169 grains he consumes 3305. He thus is able to consume about two-thirds of the normal amount of sugar. Both the father and grandfather of this patient died from diabetes.

It is not very easy for an audience to follow a speaker who is dealing with a number of figures and I am afraid I have somewhat tried your patience, but if we are to improve upon present methods it can only be by making them more exact. We must be willing to measure and to weigh repeatedly the urinary excreta of our patients and we must ask our patients to weigh their food. After all, this is not so troublesome as it may at first appear, for if the food is weighed a few times the quantity can afterwards be measured by the eye with sufficient accuracy. Our calculations, too, are not by any means difficult nor do they involve much loss of time, but no doubt they become easier when you are accustomed to them, and in this respect the specialist has an advantage.

I append a table which I hope may be found useful. It gives in parallel columns the carbohydrates per cent. and in grains per ounce of a large number of articles of food which diabetics may desire to take. By means of this table it is very easy to calculate the amount of sugar which will be formed by a given quantity of any of the desired articles. The prescriber must, of course, use his discretion as to whether any trial of this sort can be allowed and as to the amount permitted.

Table showing the Carbohydrates or Sugar-forming Substances contained in Various Articles of Diet which may be used in Limited Quantities by Diabetic Patients.

	Carbohydrates.	
Bread and bread substitutes—	Per cent.	Grains per ounce.
Toast	73·00	319·0
White bread	63·00	275·3
Brown bread	49·25	215·0
Gluten bread	28·40	124·0
Almond bread	12·67	55·0
Callard's brown loaf	6·75	29·2
Protene bread	2·7	11·7
Vegetables—		
New potatoes	16·00	69·9
Old potatoes	20·00	97·40
Salsify	15·00	65·55
Ground artichokes	14·00	61·18
Green peas	12·00	52·44
Celery	11·80	51·5
Cabbage	11·63	50·6
Radishes	8·18	35·3
French beans	6·00	26 22
Cauliflower	4·55	19·6
Spinach	4·44	19·2
Asparagus	3·67	15·7
Lettuce	2·73	11·7
Endive	2·58	10·9
Cucumber	2·28	9·61
Fruits—		
Cherries	10·0	43·7
Apples	8·0	34·9
Pears	8·0	34·9
Ripe gooseberries	7·8	34·0
Green gooseberries	2·4	10·4
Red currants	6·8	29·7
Black currants	5·0	21·8
Strawberries	5·0	21·8
Bilberries	5·0	21·8
Greengages	4·0	17·4
Apricots	4·0	17·4
Plums	4·0	17·4
Sour oranges	3·0	13·1
Cranberries	2·0	8·7
Milk—		
Condensed milk (without added sugar)	4·81	20·9
Cow's milk	4·81	20·9
Skimmed milk	4·75	20·5
Cream	3·5	15·2
Koumiss (English)	3·10	13·4

	Alcohol per cent.	Sugar. Per cent.	Sugar. Grains per ounce.
Beer—			
Burton bitter beer	5·55	5·65	24·4
German lager beer	3·95	5·78	24·9
Harvey's sugar free	?	0·20	0·8
Wine—			
Moselle (still)	12·06	2·0	8·7
Hock ,,	11·43	2·5	10·9
Bordeaux claret	9·40	2·3	11·0
Chablis	10·30	1·83	7·8
Spirits—			
Scotch whisky	49·40	0·00	—
French brandy	55·00	0·00	—

I fear that I have taken up so much of your time in discussing questions of diet that I must omit all detailed reference to other modes of treatment. I should like to be allowed to say something of the great importance in mild cases of diabetes of exercise and abundance of fresh air, but in advanced cases while fresh air still does good exercise must be very moderately indulged in and great attention must be paid to the avoidance of fatigue which is too often fatal. For this reason if for no other we ought not to send advanced cases of diabetes to travel long distances in order to undergo cures at reputed health resorts. I do not undervalue these places, indeed I appreciate very highly the skilled and careful treatment which our patients receive from the local practitioners, but it is neither fair to them nor to our patients to send the latter away from their homes when they are suffering from advanced diabetes, by which I mean cases where, in spite of strict diet, the quantity of sugar remains large and there is general failure of nutrition with acetone and diacetic acid in the urine.

In conclusion, permit me to thank you for the attention with which you have listened to this address and to ask you if I have in any way arrested your attention to read it over carefully when it appears in print, as I hope will shortly be the case, and where you have the opportunity I trust you will endeavour to put into practice the principles which I have tried this afternoon to lay before you.

The Milroy Lectures

ON

SUMMER DIARRHŒA,

WITH SPECIAL RELATION TO CAUSATION AND PREVENTION.

Delivered before the Royal College of Physicians of London on March 8th, 13th, and 15th, 1900,

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LECTURE II.[1]

Delivered on March 13th, 1900.

ETIOLOGY.

MR. PRESIDENT AND GENTLEMEN.—Diarrhœa is a symptom of intestinal irritation. The irritant may be of the nature of a drug, as arsenic or colocynth, or it may be of bacterial origin—that is to say, due to micro-organisms or to their toxins elaborated either within or without the body. The action may be in the first place directly local on the intestine or it may be due to the excretion of an irritant from the blood by the intestinal route. So far as summer diarrhœa is concerned there seems little reasonable doubt that it belongs to the microbic class and is a local affection that afterwards becomes general. It seems probable that summer diarrhœa may result from infection of the gastro-intestinal tract by various organisms.

[1] Lecture I. was published in THE LANCET of May 12th, 1900, p. 1344.

PREDISPOSING FACTORS.

The influence of age as a predisposing factor in the incidence of the disease is widely recognised and its main facts are incidentally illustrated in various parts of these lectures. One of the chief peculiar conditions of the environment of early childhood is the nature of the food, and the epidemic spread of diarrhœa may not improbably be due in many instances to a specific infection of milk. The position with regard to age as a predisposing factor in the disease has been ably summarised by a Canadian writer[2] as follows: "The enormous preponderance of deaths from infantile diarrhœa takes place before the end of the first year; there is a remarkable falling off in the second year and a still more remarkable zone of safety upon which the child enters with the third year so far as diarrhœa is concerned."

Sex.—There is a slight but distinct preponderance of deaths in the male sex from infancy upwards, but the reason for this sex selection is obscure in this as in some other maladies.

Season.—Season exerts a great influence on the disease. July, August, and September—the third quarter of the year—show double the number of deaths compared with the deaths from the same cause in Great Britain during the remaining nine months. Dr. E. W. Hope has admirably summarised the influence of wet and dry seasons directly upon street environment and indirectly upon epidemic diarrhœa in the following passage[3]: "We have the strongest evidence that a cool and wet summer and autumn will minimise the deaths from infantile diarrhœa, while a hot and dry summer and autumn will raise them to a maximum. Heavy falls of rain in this connexion are invariably followed by immense benefit and the close connexion between the thorough washing of streets, footwalks, roofs, gutters, drains, and sewers and the diminution of autumnal diarrhœa is very striking. It is an almost invariable experience that the choleraic disease of the summer and autumn months is highest when rainfall is low and declines to its minimum when heavy showers, rather than continuous rainfall, occur. The explanation is that in a fine and warm summer the accumulation of decomposing dust and dirt and filth, largely unavoidable in cities, unless removed by washing, gives rise to a filth-laden atmosphere and the mischief which follows from such a condition."

Environment.—Summer diarrhœa has already been shown to be essentially a disease of towns, where the brunt of its attack falls upon the poorer classes. Dr. Holt of New York, speaking of the general infant mortality, says: "In the well-to-do classes with the best care the mortality from all causes during infancy does not exceed 2 or 3 per cent., as against a general mortality for this period among all classes of about 20 per cent." Statistics show that a considerable amount of this disproportionate infantile mortality among the poor is due to epidemic diarrhœa. The predisposing influence of urban life forms one of the most striking features of this disease. It may, however, be of interest to mention a table which was drawn up in answer to a circular letter addressed to the medical officers of health of 30 great towns, excluding London. The object was to gain, if possible, some information as to the relation of certain conditions to the prevalence or unequal incidence of diarrhœa in those towns. The questions asked were as to the general width and paving of roads, the number and paving of courts and alleys, and the kind of scavenging applied to both, especially with reference to hosing of roadways and of courts. Various fallacies were involved, the chief one being perhaps the dilution of general results in a large town by the excessive rates of diarrhœa districts. It was found impossible to arrive at any definite conclusions, but at the same time one gathered a general impression from the table that narrow streets and many courts were associated with epidemic diarrhœa. Disadvantages of this kind may be counterbalanced by abundant rainfall and by steep gradients, which favour the action of wind and rain in clearing away dust. The local conditions of diarrhœal districts in the great towns offer a promising field for further investigations, and this inquiry might with advantage be extended so as to deal with the physical environment of the diarrhœa districts of the towns mentioned, whereby a more accurate collection of data would be secured for purposes of comparison.

The hand-feeding of infants.—The great predisposing

[2] J. T. Fotheringham: Canadian Practitioner and Review, p. 549.
[3] Public Health, July, 1899, p. 663.

influence of artificial feeding in the causation of infantile diarrhœa has been carefully investigated by various observers. Chief among them may be mentioned Dr. Hope, the medical officer of health of Liverpool, who for many years past has given much careful attention to the subject. The following pertinent remarks are taken from his report for the last quarter of the year 1899. "It is perfectly evident," he writes, "that all the conditions affecting the infant so far as feeding and the amount of parental care given it are concerned will remain the same from year's end to year's end, but it is only during the one season of autumn that the mortality from forms of disease affecting the alimentary system becomes excessive, that excess being almost in an exact ratio with the degree of dryness and the height of the temperature. The circumstances attending 1096 of the fatal cases of infantile diarrhœa during last summer and autumn have been made the subject of careful investigation; they were cases taken consecutively and the inquiry revealed many points of interest. The average age at death was seven and a half months. The 1082 families in which the deaths occurred had on the whole been fairly prolific, but particularly unfortunate in rearing their children. In one instance as many as 18 children had been born, 14 having died in infancy; in another instance a woman living had 16 children, 14 of whom died in infancy; another had had 17 children and lost 10; and many instances occurred of families of 12 and upwards with losses averaging 75 per cent. Of the total number of children born in these families 51 per cent. died in infancy. The people among whom the deaths occurred were by no means of the lowest class; in many it would appear that the families were in fairly comfortable circumstances, the husbands being men in steady work, and there were in numerous instances evidences of care and attention having been paid to the children. Upwards of 80 per cent. of the deceased infants had been insured in the burial clubs. The domestic feature of greatest importance is the method of feeding. The figures point to the old conclusions that artificial feeding during the summer and autumn is attended with immense danger to young infants. These investigations, like others that have preceded them, show that with every care there will be a fatality from autumnal summer diarrhœa of about 20 out of every 1000 infants under three months of age fed upon the breast alone, but out of an equal number of infants of the same age artificially fed the mortality from this form of disease rises enormously, I believe up to 300 per 1000—that is, a rate 15 times as great. These calculations were based upon the information obtained at vaccination stations and elsewhere which showed the relative proportion of infants fed in the various ways. So far as the actual figures go it was found that out of 676 deaths of infants under six months of age only 96 had been fed upon the breast, while the remaining 580 received food of the most miscellaneous description. In 254 of the total cases the parents were intemperate and in 115 the deaths occurred in houses unfit for human habitation." These observations of Dr. Hope are so much to the point that there need be no apology for quoting them at length. There can be no doubt that artificial feeding has a great predisposing influence in determining the mortality and probably also the incidence of summer diarrhœa, while at the same time it may sometimes convey the specific poison or poisons that cause the disease. It may act both by direct irritation of the intestine by the presence of indigestible food and indirectly by lessening the resisting powers of the child to invasion. By the courtesy of Dr. Hope I am enabled to present the following interesting and suggestive table.

TABLE IX.—TAKEN FROM DR. HOPE'S REPORT FOR THE LAST QUARTER OF THE YEAR 1899, CONTAINING THE RETURNS OF INFANTILE DIARRHŒA FROM JULY 1ST TO SEPT. 14TH IN THAT YEAR.

Total number of cases	1096	Total number of previous deaths from similar complaints	290
Total number of families	1082	Total number of children in clubs	802
Total number of houses	1078	Total number of families dirty	124
Total number of children born	4574	Total number of families in which the parents appear to be intemperate	254
Total number of children living	2245	Total number of cases in which others in house were suffering from similar symptoms	215
Total percentage of deaths	50·9	Total number of cases in which mother goes out to work	180
Total number of families in which there have been more than one death	18	Total number of cases in which parents are non-resident in Liverpool	13
Total number of cases in which there were twins	11	Total number of houses dirty	190
Average age in months	7·48	Total number of back-to-back houses	115

	Under 3 months.					From 3 to 6 months.					From 6 to 12 months.					Above 12 months.								
	English.	Irish.	Scotch.	Welsh.	Foreign.	English.	Irish.	Scotch.	Welsh.	Foreign.	English.	Irish.	Scotch.	Welsh.	Foreign.	English.	Irish.	Scotch.	Welsh.	Foreign.	Total.	Under three months.	From three to six months.	From six to 12 months.	Above 12 months.
Breast	41	11	1	1	2	29	9	1	1	—	59	17	2	1	1	31	11	4	3	—	225	56	40	80	49
Breast and bottle	41	8	—	1	1	27	3	2	1	1	29	4	1	3	—	9	3	—	1	—	135	51	34	37	13
Bottle and artificial food	96	11	2	4	7	128	16	7	7	7	179	22	5	6	5	41	16	—	1	3	562	119	165	217	61
Miscellaneous	6	—	—	—	—		—	—	—	—	22	4	—	2	1	96	26	2	4	7	174	6	5	29	134
Total	183	30	3	6	10	189	28	10	9	8	289	47	8	12	7	176	56	6	9	10	1096	232	244	363	257

THE BACTERIOLOGY OF SUMMER DIARRHŒA.

The bacteriological investigations of the fæces in diarrhœa is surrounded with great technical difficulties. This arises chiefly from the fact that the normal human intestine is inhabited by a large variety of species of bacteria. A suggestive and valuable investigation of the subject in relation to diarrhœa was reported by Dr. Klein in the Report of the Medical Officer of the Local Government Board for 1895–96. His inquiry was directed into an outbreak of diarrhœa in St. Bartholomew's Hospital, London. He isolated from the stools a peculiar species of spore-bearing and highly characteristic anaerobic organism which he named the "bacillus enteritidis sporogenes." A similar organism was isolated from the milk-supply which had been suspected as the source of infection. Dr. Klein hinted at this particular spore-bearing bacillus being the hypothetical diarrhœa microbe the existence of which was inferred by Dr. Ballard. The same observer refers to the discovery by Escherich of a virulent streptococcus producing in the infant acute septicæmic infection with sanguineous bowel evacuations. He concludes, however, that the disease due to that organism is a definite acute septicæmia of which the diarrhœa or dysentery is a symptom; it is not comparable in any way with what is termed autumnal or infantile diarrhœa. This view of Dr. Klein has not been endorsed by recent observers, neither have they adopted Klein's bacillus as that specific of summer diarrhœa. The evidence, however, appeared at

the time to be highly suggestive as to its causative relation to the St. Bartholomew's outbreak. Dr. Andrewes in the course of further investigations found that the bacillus enteritidis sporogenes was present in a majority out of 20 cases of diarrhœa. He is no less cautious than Klein, however, in assigning to the bacillus an active rôle in the causation of diarrhœa.[4] Klein has since isolated the special organism in question in several cases of infantile diarrhœa and cholera nostras and has found it present in water, sewage, manure, and in eight out of ten samples of milk examined. On the other hand he failed to isolate the bacillus in other cases of infantile diarrhœa; nor was he more successful in testing the intestinal evacuations of healthy individuals.[5] Recent investigations by Dr. R. T. Hewlett, however, appear to point to an almost universal distribution of the bacillus enteritidis sporogenes in the human intestine as well as a wide outside distribution. He sums up his results thus[6]: "I have isolated the bacillus enteritidis sporogenes from the dejecta in 12 cases of ulcerative colitis, in one case of ordinary diarrhœa, one case of chronic dysentery, and in 11 out of 13 specimens of normal dejecta from 10 healthy individuals, and the conclusion I have formed is that the organism is probably an inhabitant of the normal digestive tract and frequently to be found in the dejecta; considering the wide distribution of the organism and the resistant nature of the spores this is not unlikely to be the case. I have isolated the bacillus enteritidis sporogenes from road dust, from laboratory dust, from water, and from eight samples of milk out of 15 examined, and the conclusion I have formed is that this organism is probably ubiquitous."

To Dr. Klein belongs the merit of having first investigated the anaerobic organisms in relation to diarrhœa. The field thus opened is a large and promising one, but its complexity seems to have prevented any exhaustive research in that direction up to the present time.

Several valuable contributions have been made to the bacteriology of summer diarrhœa by Dr. W. D. Booker of Baltimore. As physician to the Thomas Wilson Sanatorium for Sick Children he had abundant clinical material and his bacteriological researches were carried out at the Johns Hopkins University. The sanatorium is devoted exclusively to the treatment of summer diarrhœa of children and is open only during the months of June, July, and August. In 1897 he published an article on the subject, containing the following general observations which he expressly stated were in no sense to be taken as positive conclusions. The constant and obligatory bacteria of the healthy milk fæces—viz., bacillus coli communis and bacillus lactis aerogenes—do not disappear in the diarrhœal fæces. The bacillus coli communis is found in all cases, but does not predominate, as is the case in the healthy milk fæces, and rather appears to diminish in numbers, the diminution being in direct proportion to the severity of the disease. The bacillus lactis aerogenes is found in nearly all cases and is generally in greater numbers than in the healthy milk fæces. With the exception of the forms obligatory for the healthy milk fæces no variety of bacteria is found sufficiently constant to be considered from this standpoint as the specific exciter of the disease. Many varieties of bacteria are sometimes found in individual cases of diarrhœa. The greatest number of varieties were found in cases of cholera infantum, a larger number in catarrhal enteritis than in dysenteric enteritis, and the smallest number in the case of a healthy child used for control, in which case only one variety was demonstrated. The actual number of individual bacteria, however, is as great in the healthy milk fæces as in the diarrhœa excreta, but they are less numerous in the discharges of dysenteric enteritis than in those of diarrhœal form. None of the bacteria isolated were found to be capable of multiplying in ordinary hydrant water 48 hours after it had been inoculated; in all such cases negative results were obtained. All the varieties of bacteria are capable of thriving in milk; some varieties produce coagulation with acid reaction; others render milk acid without coagulation; one variety coagulates milk with alkaline reaction; and some varieties have no apparent action on milk. "Imperfect as this study is," using Dr. Booker's words, "it goes far to establish the important point that not one specific organism but many different varieties are concerned in the etiology of the summer diarrhœa of infants." Booker himself[7] divides cases into groups according to the species of bacteria appearing to be of most importance in each, without reference to the clinical features. 1. Proteus vulgaris, numerically prominent. These cases are mostly of serious and chronic character. 2. Micrococci appear of special importance. These cases are usually serious and show general toxic disturbances. 3. The more inconstant varieties of bacteria which seem of importance. These cases are serious with general toxic disturbances. 4. Bacillus coli communis and bacillus lactis aerogenes chiefly found. These cases are mostly mild and of short duration, while the patients as a rule are free from toxic phenomena.

The gist of these observations appears to point to the multiple bacterial origin of the group of diarrhœal diseases described under the heading of "Summer Diarrhœa." That multiplicity, however, if accepted, does not disturb the relation of this infectious disease to soil and temperature nor to its general method of entry into the body by means of milk, as shown by Ballard. Indeed, as most of these bowel organisms, both normal and pathogenic, thrive in milk, it has been not inaptly suggested that the bacteriology of summer diarrhœa to a great extent is the bacteriology of milk. In leaving this part of the subject it may be remarked that the state of our knowledge as to the bacteriology of epidemic diarrhœa is still very imperfect. A similar remark applies to the diseases in lower animals. The bacteriological investigation of both forms, human and comparative, might possibly or probably furnish data of value not only in preventive, but also in curative, medicine.

THE COMMUNICABILITY OF DIARRHŒA.

The theory of the communicability of the disease has been advanced by several observers. One of the clearest accounts is the classical one already referred to, given by Dr. Bruce Low, of several outbreaks in the rural district of Helmsley in Yorkshire. There were 183 cases in all, divided into four separate outbreaks. In one remarkable group 60 cases followed importation of the disease into the village of Pockley from a distant town. In the 60 cases there was only one that could be clearly traced to exposure to infection from diarrhœal discharges. This view, indeed, agrees with the general experience of medical men. At the same time it should be noted that the degree of communicability appears to vary as in other infectious diseases—for instance, scarlet fever and cholera.

The exact method of communication of diarrhœa is uncertain, but close personal contact with an environment infected by diarrhœal stools appears to be almost always essential, if we may judge from a study of Dr. Low's carefully recorded cases. Speaking generally the part played by house or room infection in the spread of specific infectious diseases is perhaps hardly recognised so fully as it ought to be. In the case of enteric fever medical men are so used to tracing the disease to the agency of water or milk that they are apt to overlook such obvious sources of danger as that of a poor patient lying day after day in bedclothes and bedding more or less soaked with bowel discharges. In a paper read at the meeting of the British Medical Association at Portsmouth Dr. H. Peck made a suggestive contribution to the subject. Out of 276 cases he traced 12·13 per cent. to sick-room infection, and to that number it is fair to add some of the 38 cases included under the heading of "No ascertainable cause."

Now, the analogy between enteric fever and summer diarrhœa is strong. In both diarrhœa is a prominent feature; in enteric fever the specific microbe is constant, whereas in summer diarrhœa the causative organisms are probably multiple. In a certain number of summer diarrhœas the active cause is probably a toxin outside the body, and one would not expect the stools in such cases to possess infectivity, unless they had roused up some of the normal bowel organisms into pathogenic activity. When the specific organism or organisms of the diarrhœa invade the gastro-intestinal tract one would expect the stools to be specially infective, just as in the case of typhoid fever.

It is hardly needful to point out the facilities for the spread of room infection that are afforded in the case of acute diarrhœa. In the first place, the malady is mainly

[4] Local Government Board Report, 1897-98, p. 210.

[5] Report of the Medical Officer of the Local Government Board, 1897-98, p. 258.

[6] Transactions of the Jenner Institute of Preventive Medicine, Second Series, 1899, p. 75.

[7] Op. cit., p. 174.

one of infancy and childhood, when there is imperfect control over the evacuations. Infants and babies pass diarrhœal excreta and almost every part of the environment is liable to fæcal pollution. Then the diapers of infants used to catch the motions are washed in or near the house and a fresh source of infection is thereby created. The hands of patients can hardly escape contamination any more than the hands of those who attend to the removal of dejecta and to the cleansing of soiled articles. Further, any person coming into an infected house would run a risk of special fæcal contamination from door-handles, furniture, and, indeed, from almost every single object with which any part of the visitor's body would come into contact. These statements leave out of consideration the chance of aerial infection by specifically charged particles of dried excreta blown about as dust.

At the same time the importance of foodstuffs as an agency in the distribution of summer diarrhœa must not be overlooked. In one of Dr. Bruce Low's groups, that of the village of Pockley, out of the total of 60 cases two were clearly due to milk infection. In that particular instance the children were kept apart from their village companions, and the only communication was through the milk-supply, which was obtained from a cow belonging to an infected family.

A valuable contribution to the communicability of gastro-enteric disorder was made by Finkelstein.[8] Dealing with two successive years in Hubner's service he found a diminished mortality of 22 per cent. in the second of those periods. During the latter year the nurslings were removed from one badly ventilated ward to a new building with two good wards, while the number of nurses and attendants was doubled. From time to time epidemics took place of a gastro-enteritis which presented the character of dyspepsia, of acute enteritis, and even of cholera infantum. Each epidemic coincided with the admission of a child affected with this particular form of contagious gastro-enteritis. Other forms of gastro-enteritis did not spread when admitted to the wards. A certain number of the cases of the contagious form were fatal and in those that recovered the malady ran a slow course.

On the whole one is inclined to agree with Dr. Booker, who has favoured us with the following views: "I believe the disease to be communicable under certain conditions. It is often the case with twins for both children to have the same form of diarrhœa, and I have seen in a case of twins where one child had mild dyspeptic diarrhœa and the other child had fatal streptococcus enteritis, the first child develop in the course of two weeks the same form of enteritis as the second. At the Wilson Sanatorium for Sick Children, where each mother had a separate room for herself and baby, infection from one child to another sometimes occurs in spite of careful measures to prevent it. As we have discovered no specific germ for this disease as in the case of typhoid fever a number of difficult problems must be solved before we even know the extent to which the disease is communicable." While fully admitting the communicability of summer diarrhœa under some circumstances it is nevertheless hardly possible to doubt that the distribution of a common contagion plays the chief part in the epidemic prevalence of the malady.

THE SOURCE OF THE INFECTION.

In casting around for a possible source of what may be regarded as a manifold infection of epidemic character the idea occurred to me, as it has to others, that organically polluted dust might be the vehicle of distribution. A further consideration of the circumstances of the case led me to form an opinion that I have not seen elsewhere suggested—namely, that horse-dung may be the specific polluting material. It will be well, therefore, to consider shortly the matter of street-dust.

Dust, mud, and street environment.—The origin of dust in a country road is obvious enough. It is mainly formed of pulverised stone and earth from the macadamised roadway with a small proportion of horse-dung. When we turn to the dust of towns, however, the case differs widely. Where urban roads are macadamised the dust is still to a great extent composed of pulverised stone and earth, but there is a large admixture of horse-dung, which at once constitutes an important peculiarity in the disease-producing potentiality of urban as compared with rural dust. In roadways other than macadam we still find a considerable amount of dust. They may be made of stone or granite "sets," in which case the friction of horses' hoofs and of vehicles will create a certain amount of pulverised stone. Where the paving is of wood more or less woody fibre is pounded into dust. On all smooth impermeable pavements such as wood, asphalte, and concrete it is necessary at certain times of rain and frost to scatter gravel, which is soon converted into powder. There are other extraneous sources of street-dust, such as soot and the atmospheric particles with which the air of towns is always more or less charged. One of the chief sources of dust in towns is undoubtedly horse-dung, and the busier the streets the greater the amount of material derived from that source. The dust once formed in the streets of a town can be distributed only over a comparatively small area. When raised in one part of the street it is deposited in another at a distance dependent on the strength of local air currents and the extent to which the roadway is sheltered or otherwise by neighbouring houses. The dust of roadways in towns, then, is under conditions of creation, nature, and distribution that differ widely from the roadway dust of rural districts.

We shall now turn more particularly to the street environment of towns. The effect of rain is to convert the dust of streets into mud, which is simply dust worked up into a paste with more or less moisture. By the action of horse and carriage traffic—especially on hard paving—the mud is splashed over the fronts of adjoining houses to a height of a dozen feet or more. As already pointed out, mud is charged with horse-dung and other organic matter, and when it becomes dry it is in such a condition that it can readily be pulverised and reconverted into dust. The wide distribution of mud is simply that of organically charged dust in another form. The sweeping of dry streets, as everyone knows, often raises a dense cloud of dust. In certain atmospherical conditions, as on a still dry winter day, this cloud may rise visibly to a height of 20 feet or more, and it sometimes lingers in a street for a considerable time. Indeed, some wood-paved streets, where there is considerable traffic, give the impression in dry weather of never being free from a fine cloud of dust, as those who cycle much in towns will be able to testify. The action of wind in raising dust is obviously considerable. It is only high and constantly prevalent winds that would be likely to sweep the streets of a moderately sized and tolerably flat town. The narrowness of streets and the height of houses must obviously have a considerable influence upon the dispersal or otherwise of dust-clouds. A town built on a slope would be less likely to harbour dust than one lying on a plain. The paving of streets, as already hinted, has a direct bearing upon the amount of accompanying dust and mud. It is clear that macadamised roadways must be always dusty and muddy, because of their looser surface and because they can never be efficiently cleansed, that is to say, washed with hose and hydrant. To a less extent the same is true of paving by stone sets and cobbles; the numerous interstices harbour dust and mud and forbid effectual cleansing. The smoother, harder, and more impervious the roadway the less the accompanying dust and mud, and the more thorough the cleansing processes that can be applied. The practical lesson to be learnt from the action of rain upon the streets is that systematic watering is desirable in dry weather and that no roadway should be swept without previous watering. The latter precaution is needful because the invisible distribution of road-dust is far-reaching. In this way when stirred up by traffic or by wind or by sweeping it invades dwellings and is freely deposited in passages, courts, and yards.

In theory the germicidal action of the sun upon the bacteria of organically charged road-dust is no doubt considerable. In practice one may doubt whether the germicidal action of the sun is in any sense a universal or even widely active germicide or is antiseptic to the road-dust of large towns. The layer of dust, for instance, is often too thick for penetration and the intimate relation of microbes to the sheltering organic material is too close to permit of anything like a thorough germicidal action of the sun's rays. Then, again, the narrowness of the streets and the height of the adjoining houses is such as to prevent any but a brief spell of sunshine from reaching the roadway. It will be seen that narrow streets with high houses and macadam or rough stone paving are most calculated to create and harbour dust. It is worthy of note that these undesirable characteristics are in direct opposition to modern views of street construction. In some of the diarrhœal towns or the diarrhœal quarters of towns

[8] Zeitschrift für Hygiene und Infections-Krankheiten, 1888, Band xxviii., s. 124.

there is reason to suppose that narrow streets, macadamised roadways, and numerous courts prevail. From the nature of the case it has not been possible to establish anything more than a general opinion.

THE BACTERIOLOGY OF HORSE-DUNG.

This subject is a wide one and it has not been possible within the time at command to do more than arrive at a few facts. Mr. E. C. Bousfield, who at my request has kindly conducted some investigations into the subject, has reported the presence in the fæces of the horse of 31 varieties of bacteria, among which are bacillus coli communis and the proteus vulgaris. Dr. Hewlett has also found the bacillus enteritidis sporogenes in the same material.

As an evidence of the power of equine excrement in the possible general distribution of micro-organisms the following points may be of interest. A single gramme of moist horse-dung was found to contain nearly 10,000,000 bacteria. Taking the moisture at 75 per cent., which is a low estimate, and an average dropping as weighing one kilogramme, we find that such a dropping if converted into dust would furnish some 10 000,000,000 micro-organisms capable of diffusion through the air and contained in about half a kilogramme of dust. Of the organisms thus distributed a large proportion are, of course, perfectly harmless, but there are many the pathogenic powers of which are well known and there are others which must be regarded with suspicion.

The bacteria above mentioned have been repeatedly found in the fæces of summer diarrhœa in man and are held by some observers to have a definite causal connexion with summer diarrhœa in man. At any rate we may confidently make the general statement that certain micro-organisms are common to the intestines of the horse and to those of man.

These facts are suggestive, and it will be interesting to ascertain by future experiment whether any definite organisms may be pathogenic alike to the gastro-intestinal tract of the horse and man. The diarrhœa of the horse, which is common enough in towns, offers another field of promising research. Meanwhile, before any absolute conclusion can be arrived at it will be necessary to have a more detailed and exhaustive knowledge of the organisms, normal and pathogenic, aerobic and anaerobic, that are common to the intestines of the horse and to those of man. The extensive nature of such an investigation is shown by the fact already mentioned that in a gramme of horse-dung were found nearly 10,000,000 bacteria capable of developing upon the ordinary culture media, to say nothing of the anaerobic organisms which appear to be almost equally numerous. Mr. Bousfield has with certainty identified proteus vulgaris, bacillus fluorescens liquefaciens, bacillus subtilis, and bacillus coli communis. In addition, he reports the presence of others, notably a streptococcus which does not grow at ordinary temperatures, and which is the only one of this form so far found. Bacilli seem to be in the majority, and of these many are of a polymorphic type and appear to belong to the same group as the bacillus coli communis. Of cocci the number is much smaller and only a single form of cladothrix has yet been isolated. One important fact, from this point of view, remains to be mentioned—namely, the very considerable number of chromogenic organisms present in horse-dung. Booker appears to have found none of these in his investigations into the bacteriology of human diarrhœa, and he has for the most part, after isolating bacillus coli, bacillus lactis aerogenes, and proteus vulgaris, contented himself with such generalisations as "cocci" or "a green liquefier."

One of the greatest difficulties in research work upon this subject lies in the uncertainty of identification, a difficulty that is increasing day by day with the discovery of new organisms. To classify organisms under letters of the alphabet is simply to shirk the difficulty. It is evident that to be really useful individual work must be capable of collation with the observations of others in the same field. In order to complete the study of the possible relation of the bacteria of the intestine of the horse with human maladies it will be necessary to investigate the bacteriology of the diseased as well as of the healthy equine bowel. Fortunately, however, the extensive nature of any such investigations need not delay the immediate application of radical measures of prevention.

A CLINICAL STUDY OF THE CAUSES OF THE FIRST SOUND OF THE HEART.[1]

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IN the beginning of 1896, when in charge of my colleague Dr. C. E. Beevor's beds in the Great Northern Central Hospital the following case was admitted under my care, and to some points in it I wish to refer in connexion with the theme of this paper.

A housemaid, aged 22 years, was admitted into the hospital on Jan. 6th, 1896. She was stated never to have had any serious illness until about two months previously, when she manifested shortness of breath, lassitude, and loss of appetite, together with a progressive anæmia. About three weeks later the acute phase of her illness began, when she complained of pains in the abdomen, vomited daily, had headache, was feverish, and at night was somewhat delirious. She steadily became worse, refusing food and losing weight until the date of her admission. On admission she was found to have tenderness in the left hypochondriac region. The area of splenic dulness was increased downwards and forwards two-thirds of the way to the umbilicus, but could not be palpated on account of reflex rigidity of the abdominal muscles induced by the excessive tenderness to touch. The other abdominal organs presented nothing notably abnormal except the kidneys, the urine showing a trace of albumin and having a specific gravity of 1018. The examination of the lungs gave a negative result, but respiration was very rapid and shallow, being at the rate of 84 to the minute. The heart's action was also very rapid but regular, and its impulse was recorded as heaving and in the nipple line. The heart-sounds were also described as having been "loud" and without bruit. The pulse was soft, regular, and had a rate of 150 to the minute. There was some œdema of both feet. The patient was conscious, had equal pupils which reacted to light, exaggerated knee-jerks, continuous ankle tremor of a neurasthenic type, and well-marked superficial reflexes generally. The temperature was 101·8° F. and there was no cutaneous eruption.

It is not necessary in the present connexion to enter with much detail into the subsequent clinical history of the case other than that affecting the heart-sounds, beyond stating that the temperature ranged between 97° and 103° until the two days preceding death, when it fell as low as 95°, rising on the day of death (Jan. 16th) to 98·5°; that the area of hepatic dulness increased; and that a loud superficial friction, manifest on auscultation, appeared over the gastro-hepatic area which was shown at the necropsy to be transmitted from the perisplenic region through the intervening organs which acted as conductors of sound.

As regards the cardio-vascular signs the following facts were noted. On Jan. 11th the first note is made of the condition of the heart after the record made on admission, when the sounds are described as being "very loud and hollow" and associated with a "slight systolic bruit at the apex." On the 12th it is written that there was a "very high-pitched systolic bruit at the apex quite different in quality from that observed the day before, and that "the pulse and respiration continued very rapid." On Jan. 15th the pulse, it is stated, could only just be felt at the wrist and the heart-sounds are described as good and the action as regular and at a rate of 108. The respiratory rate was 60 and the abdomen moved with the descent of the diaphragm. The morning temperature was normal and fell to 95·4° on the same evening. The patient was then dying from exhaustion and on the next day died. The necropsy was made by the pathologist to the hospital (Dr. Freyberger) on Jan. 17th, 20 hours after death. All the organs of the body were healthy with the exception of the spleen, the heart, and the kidneys, and the description of these I copy *verbatim* from the register.

"*Spleen*, double size, firmly adherent to peritoneum by means of perisplenitic pseudo-membrane; a large anæmic infarct running like a band across the whole of the subsurface. A smaller cone-shaped one near the apex. No suppuration. Consistence somewhat increased.

[1] A paper read before the Medical Society of London on May 14th, 1900.

"*Kidneys.*—Both cloudy. Capsule not stripping readily. Cortex diminished. Glandular structure indistinct. A small anæmic infarct. No metastatic abscess.

"*Heart.*—In the pericardial cavity about six ounces of clear serum. A somewhat recent pericardial adhesion posteriorly about half way between the coronary sulcus and the apex; a much older one (which has evidently become detached) at a similar place anteriorly. There are milky spots anteriorly over the right ventricle. Right ventricle.—On section muscle about a quarter-inch thick, healthy looking, consistence not diminished. Pulmonary valves competent, natural. Tricuspid natural; admits three fingers. Loose clot and much fluid blood in right ventricle. Right auricle natural. Left ventricle somewhat contracted. On section muscle half an inch thick, of a greyish-red colour, consistence not diminished. On the left lateral semilunar valve a large lump of coagulated fibrin of a verrucose appearance, taking up the entire ventricular surface and dragging the valve downwards. The fibrinous deposit is continued on to the right lateral aortic valve, which with its anterior half participates in the formation of this excrescence which sends a long, free, tongue-like process down into the ventricular cavity. A similar verrucose excrescence the size of a pea, on the posterior valve, occupying the site of the nodulus Arantii. Mitral valves.—The mitral cusps are both involved in the process, the valves shortened, and their free edge covered with more cauliflower-like excrescences, which are especially extensive on the auricular surface of the aortic cusp and the right half of [the] posterior cusp. The valves are nowhere perforated, the chordæ tendineæ of [the] aortic cusp shortened, and on some of them there is also precipitation of fibrin in consequence of peri-tendinitic roughness. The posterior auricular surface roughened and puckered, with some lamellar fibrinous precipitate in places."

This case was evidently one of so-called malignant endocarditis, ingrafted in an anæmic subject upon old and extensive lesions of the aortic and mitral valves, probably of rheumatic origin, although no history to this effect could be elicited. The clinical observations were made by myself and by Mr. Randall Wadd, who had been house physician to the Brompton Hospital for Consumption before coming to the Great Northern Central Hospital. I mention these particulars to increase the value of the observations which refer to the general clearness and audibility of the heart-sounds. This condition attracted my attention the more because I had at that time recently assisted the late Sir Richard Quain in the preparation of a paper which he read before the Royal Society on June 3rd, 1897, on the mechanism by which the first sound of the heart is produced. In the case I have recorded, except upon the rare occasions on which a systolic bruit was heard at the apex, both sounds were, as has been stated, clear and even, as the notes tell, "loud" and without bruit. After the evidence of destruction in the aortic and mitral valves revealed at the necropsy it became a matter of interest to discover where and how these apparently normal sounds originated. That the clear second sound could only arise at the pulmonary arterial orifice was manifest and its clearness or loudness were probably in a measure due to abnormal tension in the pulmonary circuit and the absence of disturbing murmur in the left heart together with its superficial position. But the explanation of the clear *first* sound was as much a puzzle to me as a clinician as the satisfactory explanation of the first sound of the heart still is to many experimenting physiologists. I therefore thought some light might be thrown upon the cause of this sound by studying it from the clinical point of view and have examined a number of cases with this object. A large proportion of these cases were taken from my clinic at the Paddington Green Children's Hospital as a matter of personal convenience rather than of choice, but the circumstance is not to be regretted because of the variety such subjects present and the ease with which sounds are conducted through their chests. The younger the child, indeed, the more easily are both heart-sounds radiated all round the chest, but there are of course points at which one or other sound has its position of maximum audibility. In the case of the first sound, as we know, this is at the apex of the heart and in the case of the second at the base. The general principle that a greater noise obscures a less is true in the case of the heart as in that of all other substances or media which are resonant. The possible media for the generation and conduction of sound in the case of the heart are its fibrous structure and valves, its muscle, the blood circulating through the organ, and the thoracic case which contains the whole with its solid and gaseous contents and surroundings. We may shortly consider these possible factors *seriatim*.

1. As regards the valves. In the case of mitral systolic bruit both sounds may be universally audible in front, even including the apex area, when the bruit is not loud, and in this case to the right of the sternum both sounds may be heard without associated bruit. This may be so even when regurgitation through the valve is sufficiently marked to be audible in the left paravertebral groove. But in such case the second sound is not audible in the back. When the second sound is audible in the back in mitral regurgitation, it is usually at the level of the scapular spine and denotes accentuation of that sound and all that that implies. When the second sound is thus accentuated the first sound is usually obscured, and systolic bruit and the evidences of dilated hypertrophy are generally well marked. When the mitral bruit is presystolic in time and even associated with presystolic thrill both sounds may be universally audible in front unless the noise of the bruit be considerable, in which case the first sound is masked and the second audible as a simple or reduplicated sound. In the case of a double mitral bruit both sounds may be audible outside the apex area, while the second may be heard at the apex and in both paravertebral grooves. With aortic systolic bruit the first sound may be obliterated in the aortic area and the second heard, while both may be audible in the pulmonary area and also in front, provided the systolic bruit be not very loud. Both sounds may also be distinctly audible all over the præcordia when the aortic bruit is diastolic, unless the diastolic bruit be loud, when the second sound is as universally masked. If with a loud diastolic bruit the heart suddenly fails, as it does in anginous attacks, the pulmonary second sound becomes audible and even accentuated and is again masked when the bruit returns with the recovery of the heart. In double aortic bruit there is most abolition of the heart-sounds because the noise is often considerable. With fair ventricular systolic force, however, in these cases, the closure of the pulmonary valve is usually marked by a detectable second sound. When an aortic systolic bruit is associated with a mitral systolic bruit the second sound may be clearly audible, both noises being systolic. The same is true of systolic pulmonary murmur with tricuspid regurgitation, of which I have observed one case verified by post-mortem examination. In this instance, however, the aortic second sound could only occasionally be detected with difficulty on account of a diastolic pulmonary bruit being also present. Hæmic systolic bruits at the base of the heart may conceal the first sound to one or both sides of the sternum, but in such case both sounds are easily audible at other points of the præcordia. In cases of congenital malformation of the heart when bruit is present it is usually (always so far as my experience goes) systolic, and if loud may mask the first sound, but not by any means invariably. Even when the systolic bruit is loud the first sound may at times be easily heard through it. The second sound is usually very distinctly audible, because accentuated, and both may be heard over a wide area. Thus in the case of a patient under my care in the Children's Hospital there was a loud systolic bruit best heard over the cartilage of the fourth left rib, but both sounds could be heard universally over both the front and back of the chest with remarkable clearness, although the first sound was masked but not lost in the area of loudest bruit. On the other hand, considerable congenital defects may be present, as shown by subsequent necropsy, and even in association with well-marked cyanosis, without presenting any bruit. In such cases both sounds may be widely heard and only differ from the normal in exhibiting an accentuation proportionate to the cardiac hypertrophy and vascular impediment present.

2. As regards the influence of the cardiac muscle in the production of sound. The force of systole in modifying the pitch or audibility of bruit is a well-known fact. To detect an indistinctly marked bruit we often cause the patient to walk about or exert himself in some manner to increase the force of systole and with it the audibility of murmur. It may frequently be observed also that as the force of systole wanes bruits usually easily detected and of an average and steady pitch become less audible or even lost. In the stage of exhaustion in protracted fevers the audibility of the first sound is frequently much impaired. This is also the case in

feeble persons in advanced life and during failure of the circulation from anæsthetics or other cause. In all these cases the second sound is usually more audible than the first if the arterial valves be entire.

3. The clinically observable influence of the blood in the production of sound and in the obscuration of sounds is perhaps the most easily determinable of all the factors mentioned so far. The weakening of the heart-sounds from loss of blood in surgical and obstetric practice is too well known a phenomenon to call for further comment, while the possible loudness of bruits or noises at defective orifices has been sufficiently emphasised in a previous section. In the case with which I opened this paper, indeed, the peculiar audibility of the heart-sounds was no doubt chiefly owing to the abolition of the bruits in the left ventricle by the failure of impulse in the circulation, although this does not explain fully either where or how the persistent sounds were originated.

4. The fourth and last factor which I have to mention in connexion with a clinical study of the cause of the first sound of the heart is the possible influence of the thoracic case in which the sound-producing organ is contained. All clinical conditions may be regarded as ready-made natural experiments for the study of the physician, but on this point nature at times makes an experiment which is as artificial as any performed in the physiological laboratory. Personally, I have never had an opportunity of observing a case of ectocardia, but such have fortunately been carefully studied. Mr. C. G. Grant observed a case in 1896, an account of which with an accompanying photographic illustration may be seen in the *British Medical Journal* of Dec. 5th of that year (p. 1639). In this case, which was that of a fœtus born alive about the eighth month and which lived for six hours, the heart, which was "external to the chest wall" and devoid of pericardium, pulsated vigorously. The sounds at the base were clear and distinct, no murmur being audible; auscultation at the apex was, it is stated, "impracticable owing to the exaggerated movements." The influence of the chest-wall in contributing towards the sounds of the heart as determined at the bedside may therefore be set aside as a negligible or inoperative quantity. Where, then, and how did the clear heart-sounds in my case origicate? In the first place, where?

As has been already stated there can be little doubt that the second of the two normal sounds detected originated at the pulmonary arterial orifice, for the aortic valves were too much diseased for competent closure. The situation of the first sound heard remains to be determined. As has been mentioned the sounds were recorded at times as peculiarly "loud." Now, it is a characteristic of noises at the pulmonary arterial orifice that they are very easily heard on account of that vessel being comparatively near the surface. With the accentuated *claquement* of the second sound at that orifice we are all familiar. It is loud to the ear and palpable by the hand. It may, indeed, be used when thus marked for determining the position of the base of the heart without other aid. Bruits at the same orifice though rarely observed are loud and easily perceptible and may be associated, as in a case which I published in the Transactions of the Pathological Society (1876), with a very coarse thrill. Similarly other sounds originating in the right ventricle if freed from obscuration by competitive noises might be expected likewise to be distinctly audible. In my case this freedom from competitive noise might be supposed to be secured by the feebleness of ventricular action in the diseased left ventricle which, together with the reduced aortic pressure from valvular reflux, prevented the generation of bruit at the defective orifices. It may be asked, then, if the left ventricle was so greatly disabled whether the right did not also share its enfeeblement; and this must undoubtedly have been the case. If, therefore, the first sound originated in the right ventricle it must at any rate mainly have been due to some circumstance or circumstances other than contraction of the cardiac musculature of that chamber. What was this circumstance, or, it may be, what were these circumstances? This leads to the consideration of how the first sound of the heart originated if it be assumed or granted that it arose chiefly in the right ventricle, as seems probable.

In making a few remarks upon this point I desire to avoid all appearance of dogmatism and merely wish to mention some circumstances as premisses which appear to lead to a rational conclusion. The argument will be from the known to the unknown or, at all events, the disputed. My case merely taken as an example shows that either series of semilunar valves may alone be the site of the second sound of the heart, because the aortic valves were quite incompetent in that case and therefore silent. When the second sound is accentuated, moreover, the sound may be felt to be coincident with closure of the semilunar cusps if the hand be placed on the chest while the ear listens through the stethoscope. The second sound, therefore, is due chiefly to an incident in diastole, not to diastole as a whole. It appears possible, therefore, that some incident in systole and its surroundings may play a greater part than others in the production of the first sound of the heart. The possible factors have already been stated to be: (1) the valvular and fibrous structures of the heart; (2) its muscular action; (3) the blood waves; and (4) the thorax.

As regards the first point, we have seen that the first sound may be audible in all forms of valvular disease at one or other part of the chest unless obscured by bruit, which is a very different matter from being abolished or replaced by such. Even hæmic bruit without any valvular incompetence may obscure the first sound of the heart. There is, however, a fallacy involved in drawing a positive conclusion from this consideration, because to exclude the participation of the valvular structures from taking part in the production of the first sound there should be evidence of all four being greatly incompetent at the same time. Such a condition if present in considerable degree would be incompatible with any but the shortest life, and I am not aware that it has been observed by the clinician or even by the experimental physiologist, although I have myself known the aortic, mitral, and tricuspid valves to be simultaneously much disorganised. But even if all the valves were diseased at one time the character as well as the degree of the disease would have to be taken into consideration in deciding the point, for the stiffened flaps of an indurated valve may be an excellent vibrating structure, or serve in a great measure to divide the blood-stream as under normal circumstances. It is certain that the first sound may be audible when representative valves (auriculo-ventricular and semilunar) are diseased, but some share in the generation of the first sound of the heart on the part of the valvular structures cannot be excluded as a result of clinical observation, although that share has probably been over-estimated.

As regards the muscular factor my case proves that the first sound of the heart may be clearly audible when the muscular force of the ventricles is at zero. Congenital cases, moreover, show that gaps in the cardiac septa do not interfere with the generation of a normal first sound, although resulting bruit may at some points obscure it. Sound emitted by the cardiac muscle seems therefore, on clinical evidence, not to be an important factor in the production of the first sound of the heart as conveyed to the ear by the stethoscope.

The influence of blood waves on the other hand in producing sound is clearly shown by the character and variation of the bruits or noises which arise when the blood current is transmitted through diseased or malformed apertures. As, moreover, the distinction between a noise and a tone is merely one of vibration and the fluid medium—the blood—is that to which such vibration must in greatest measure be communicated, the important part played by the blood itself in the production of the first sound of the heart, appears on clinical grounds to be unquestionable.

The last point which has to be weighed—namely, the influence of the thorax, the air-containing cavity which holds the heart in producing the first sound, is easily disposed of. Mr. Grant's case already quoted proves not only that the chest wall has little or nothing to do with the production of the sounds of the heart, including the first sound, but also reveals another very interesting fact—namely, that both sounds may be clearly audible in cases of ectocardia at the base of the heart, when the apex from its mobility is incapable of being satisfactorily auscultated. Were it possible to place the whole mechanism in vacuo without the heart ceasing to pulsate, no doubt all sound to the ear would be abolished very much as the movements of a watch would cease to be audible under like circumstances. But the general question of the conductive power of air may be dismissed as foreign to the present inquiry. In Brakyn's[2] apparatus air took the place of blood and emitted the systolic and diastolic sounds. In nature blood takes the place of air.

[2] THE LANCET, November, 1849.

The conclusion, therefore, which appears to flow from this clinical study of the question seems to be that the impulse given to the blood by the muscular action of the heart gives rise in it and in the vibratory structures containing it, to vibrations of a certain quality which result in that tone which is synchronous with cardiac systole and usually called the first sound of the heart, and that the largest share in this result must be attributed to vibrations in the blood itself, to produce which at a normal rate valvular support of the vibrating blood-columns is necessary. The study of some congenital cardiac malformations especially appears to support this conclusion because with considerable parietal defects and bruits caused by such the sounds of the heart may be well heard so long as the division of the blood is fairly maintained by the valves. This conclusion from clinical observations and argument is essentially the same as that reached by the late Dr. Arthur Leared, formerly one of the physicians to the Great Northern Hospital. I cannot, however, agree with him when he writes that the events which occur in the ventricles and at the arterial orifices have no more to do with the generation of the sounds than "the vibration of a door [has] with the sound produced by air [passing] through its keyhole."[1] There is a difference in the noise made by a door slammed to and one pushed open. The former represents the second, the latter the first sound of the heart and in both the character and distribution of the vibrations differ.

The conclusion I have drawn differs somewhat likewise from that arrived at by my late friend Sir Richard Quain in that I cannot attribute so much importance as he did to the impact of the ventricular blood against the closed semilunar valves only and the superincumbent blood-columns, although I think there can be little doubt that it is at this point that the most important portion of the vibrations arise which result in the production of the first sound of the heart. Dr. Leared appears to me to have attributed too much and Sir Richard Quain too little importance to the sound-producing qualities of the blood itself. The truth appears to lie between the views of these two observers and may include as a very subsidiary factor a note derived from the muscular contraction of the organ. The estimation of the last point, however, by the clinician is a very difficult matter.

I have purposely refrained from reference to the results of experimental physiology on this occasion, not because I underrate its great importance, but because it has been my desire to show that in the advancement of scientific medicine the careful study of the ready-made experiments which come under the cognisance of the clinician (a field open to all departments in the profession) may be fruitful of valuable results. The power to disintegrate factors, however, which belongs to the experimenting physiologist renders his assistance necessary to a precise knowledge of the causes of vital phenomena. Some of these, and notably Halford in his valuable essay on the Action and Sounds of the Heart (1860), are largely in agreement with the conclusions set forth in this paper. They dissent from them chiefly in the greater importance which they attach to vibrations of the auriculo-ventricular valves and of the blood in the ventricular cavities.

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[1] Essay on the Sounds Caused by the Circulation of the Blood, London, 1861.

THE STANDARDISATION OF ANTI-VENOMOUS SERUM.

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THE standardisation of anti-venomous serum is of some theoretical interest, as well as of practical importance, for the first step in studying the process of neutralisation of a toxin by its antitoxin is to obtain a reliable method of measuring the latter. As illustrating the practical bearing of the subject the fact may be mentioned that some 20,000 persons are reported to have died from snake-bite in India during the year 1898.

Now, it is a matter of extreme difficulty to obtain clinical evidence of the therapeutic value of an antitoxin. Diphtheria antitoxin is one of the most successful, and yet clinicians were for some years undecided as to its value, and even now their opinions are not altogether in agreement. Moreover, there has never been, to my knowledge, much doubt as to the laboratory value—if I may use the expression—of this antitoxin. With snake-poison, however, the case is very different. In the first place, as the history of the therapeutics of snake-poisoning shows, there has been the greatest difficulty in determining the value of various remedies employed. Further, the anti-venomous serum is prepared by immunisation against a mixture of venoms, of which cobra poison forms 80 per cent. Calmette, in whose laboratory the antitoxin is made, claims that it neutralises, and is for a certain time at least after the bite even curative for, the bite of all poisonous snakes. Other observers have not substantiated this claim. Cunningham,[1] for instance, found that in the laboratory the antitoxin had very little, if any, neutralising effect even upon cobra venom, the venom for which it should be most efficacious. And more recently Stephens[2] has shown that its power of neutralising the poison of certain other snakes is very limited indeed. It is possible that the results of Cunningham were due to a deterioration of the serum after leaving Lille, its place of manufacture—a deterioration doubtless in some part due to the effect of temperature on the antitoxin. It is, therefore, important that a reliable method of standardisation should be used for the serum employed clinically, both for the advantage of the patient and in view of obtaining reliable statistics as to its therapeutic value. So far, to my knowledge, apart from a few isolated cases that have been recorded there are no statistics available.

At Lille the serum is standardised in the following way. Rabbits of about 2000 grammes in weight are employed and the test dose of the mixture of venoms that is used for immunisation is ascertained. It may be mentioned in passing that this mixture is heated to 73° C. for half an hour before use. The test dose chosen is that amount of the mixture which kills the animal in from 15 to 20 minutes when injected intravenously. The amount of serum which will just prevent death when injected five minutes before the venom is then determined. This amount of serum is said to contain 2,000 units of immunity.

We now know that for snake-poisons toxin and antitoxin interact directly, and so far as our knowledge goes the process is independent of any vital action. Since the above-described method was designed to permit of the supposed stimulation of the cells of the animal before the toxin is introduced but does not allow of the completion of the reaction between the two bodies before they enter the blood-stream it must be described as unscientific.

The first step in the direction of a rational method of standardisation was taken by Semple and Lamb.[3] These observers determined the number of minimal fatal doses contained in Calmette's test dose, and thus gave a value for the serum in terms of its neutralising power, not, as in the method above described, in terms of its preventive power. They found that Calmette's dose for the rabbit amounted to three times the minimal lethal dose for that animal.

As has been mentioned, it is important that the method of standardisation be devised so that the general practitioner may be able himself to ascertain, at all events approximately, the strength of the serum which he is about to use. Calmette's method is unsuitable for this purpose for several reasons. The mixture he uses is complicated, and should be replaced by a single venom that is easily obtainable. Although intravenous injection is a simple operation, subcutaneous inoculation is simpler, and if equally accurate is for this reason to be preferred. Calmette heats his venoms to 73° C. for half an hour. This procedure may render the venom more suitable for immunisation, but as we have clinically to deal with intoxication by unheated venom it seems *a priori* preferable to use unheated venom for standardisation. The changes that cobra poison undergoes on heating at this temperature will be mentioned later.

For this purpose a cheap and susceptible animal is desirable. Now it is clear that with equally susceptible animals—that is, with animals for which the minimal lethal dose per gramme of animal is the same—the smaller the animal the smaller will be the differences that can be

[1] Sci. Mem. Med. Off. India, 1896.
[2] Journal of Pathology and Bacteriology, 1900.
[3] Brit. Med. Jour., April 1st, 1899.

observed in the neutralising power of the antitoxin, since with many snake-toxins we can only distinguish between mixtures of toxin and antitoxin that are fatal and non-fatal. The larger the maximal non-fatal dose the larger the error. For the same reason the test dose should be a multiple of the minimal lethal dose and as large a multiple as possible. Amongst common laboratory animals guinea-pigs and mice seem to be the most suitable. Guinea-pigs, however, cannot be used, for to neutralise a multiple of the minimal lethal dose undiluted serum must be employed, and, as Cobbett[4] has shown, horse serum is very often acutely toxic for these animals. The serum is also toxic for mice in some cases, but I have found that death from it does not occur within the first 24 hours, so that if the results be noted for this space of time we can neglect the toxic action of the serum. Using mice of about 15 grammes in weight as test animals, and unheated cobra poison, it was found possible to determine the minimal lethal dose to within about 20 per cent.—in other words, increments of one in five could be certainly and constantly appreciated. This dose I found to be 0·012 milligramme and it killed in from three to four hours. Taking ten times this quantity—namely, 0·12 milligramme—the amount of serum required to neutralise it was then determined, the mixtures being allowed to stand at room temperature for half an hour. The neutralisation of ten times the lethal dose could be estimated to within 15 per cent.; when the doses of serum were made closer, the series became too irregular for distinctions to be made within this limit.

On comparing the two methods, the method of mixing *in vitro* and testing the mixtures on mice was found to be more accurate than the rabbit method as used by Calmette. For example, with rabbits of about 2000 grammes in weight, 0·5 milligramme per kilogramme of the dry venom employed killed in 20 minutes. When 0·3 cubic centimetre of anti-venomous serum per kilogramme had been injected five minutes previously the animal died in an hour and a half. With 0·4 cubic centimetre of serum and more, the animal lived and showed no symptoms. 0·5 milligramme of venom is here neutralised by 0·4 cubic centimetre of serum. Hence 0·12 milligramme would be neutralised by 0·096 cubic centimetre of serum. With mice, however, using the same serum, 0·2 cubic centimetre was required to neutralise 0·12 milligramme of the poison. When 0·175 cubic centimetre was used, the animal died in three hours. The latter method is therefore more accurate.

This method of standardisation with unheated cobra poison[5] is cheap, simple, and accurate enough for clinical purposes. We may for convenience call a unit of immunity that quantity of antitoxin which neutralises ten times the minimal lethal dose of cobra poison for a mouse weighing 15 grammes. A serum, for example, of which 0·2 cubic centimetre was required to neutralise the test dose would contain five units per cubic centimetre.

This method does not reach any great accuracy, and this is doubtless due to the weakness of the antitoxin. When it is possible to standardise this serum with 100 times the minimal lethal dose much greater accuracy will probably be possible.

This investigation was begun last year in Professor Ehrlich's laboratory, at his suggestion, and I take this opportunity of expressing my thanks to him for the assistance and advice which he has so kindly given me.

Cambridge.

[4] Proceedings of the Physiological Society, 1899.

[5] The effect of heating a solution of cobra poison (1 cubic centimetre = 1 milligramme in physiological saline solution) to 73° C. for half an hour I have found to be as follows. The minimal hæmolysing dose for human blood is raised 20 times. The minimal lethal dose for mice, subcutaneously, is doubled. The power of the toxin of combining with the antitoxin is also diminished, but not nearly to the same degree to which its toxic power is weakened.

ROYAL ALBERT HOSPITAL, DEVONPORT.—The Managing Committee of this institution, finding that additional accommodation will have to be provided, have decided to erect a residence for the nurses, and important improvements are also to be carried out in the operating theatre, in the out-patients' department, and in the wards. The estimated cost is about £5000, towards which Sir John Jackson has given £500. The committee hope that further subscriptions will be received so that the necessity of drawing upon the capital may be obviated.

CHRONIC ABSCESS OF THE PERICARDIUM.

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THE patient was a married man who was admitted into the Newcastle City Asylum in July, 1866, and who had therefore been for 33 years under observation. His history previously to his admission into the asylum was as follows. He was by trade a sawyer and from an early age he had been a heavy drinker. Seven weeks before admission he became excited and violent, finally becoming so unmanageable that restraint was deemed necessary. His father and sister died from phthisis.

Progress of the case.—On admission he was found to be a well-nourished and muscular man, aged 34 years. He was suffering from mania *à potu*. Nothing abnormal was noted as to his circulatory system, but there were pain and tenderness on pressure in the hepatic region. He soon became threatening and violent, making several attacks on the attendants and other patients, and about 18 months after admission symptoms of dementia were noted which gradually increased up to the time of his death. In 1873 he was noted as having an attack of synovitis in the left knee, ending in pus formation; but on the whole his health remained good until January, 1892, and he was regularly and usefully employed about the gardens and grounds of the institution. In January, 1892, he had what was regarded as an influenzal attack—diarrhœa, pains in the back, the head, and the limbs, hot and flushed face, and hot and dry skin. From this time his health was never good. In January, 1893, he was noted as having a carbuncle on the nape of his neck and herpes in the areas supplied by the left superficial cervical nerves. In April, 1894, he was in poor health and condition. About the middle of 1895 the heart's action became weak and the administration of digitalis was considered to be necessary. In October of the same year he had a syncopal attack. After this it was not until the year 1897 that a slight improvement was noted in his health and he became well enough to be again employed. In July, 1898, he was confined to bed suffering from symptoms of heart failure. The pulse was feeble, irregular, and intermittent, there were pallor and general feebleness, and the heart sounds were muffled and feeble, unaccompanied by a murmur. Under digitalis and rest in bed he improved and was able to get up later for half days, but the cardiac action remained feeble and he was subject to frequent attacks of threatening heart failure. In January, 1899, his feet and ankles became œdematous. From that date he was permanently confined to bed, showing only temporary improvement, and a discontinuance of the digitalis mixture was invariably followed by rapid and dangerous deterioration. Towards the end of October he failed rapidly, the œdema became more marked, and dulness was observed at both bases. The heart sounds could scarcely be heard. On Nov. 16th the breathing became shallow and difficult, loud râles were heard all over the chest, and he died on Nov. 18th at 6.55 P.M., being then 67 years of age.

Necropsy.—A post-mortem examination was made on Nov. 21st at 11 A.M. The body was emaciated. Rigor mortis had passed off and there was slight post-mortem lividity of the dependent surfaces. Both dura mater and pia-arachnoid were generally thickened but they showed no abnormal adhesions. The convolutions showed wasting, both cortex and white substance being atrophied. The lateral ventricles were dilated. There was marked atheroma of the basal vessels. The brain as a whole weighed 1340 grammes and after dissection 1243 grammes. On attempting to open the pericardium it was soon evident that much thickening existed and that the pericardial layers were firmly adherent. Continuing the incision round to the left side a cavity was opened and some thick, creamy, greenish-yellow pus exuded. The heart and pericardium were removed *en masse* and were found to weigh 530 grammes. On dissection the cavity above mentioned was found to be over the wall of the left ventricle and to contain about four ounces of pus. The walls were thickened and lined with a definite pyogenetic membrane. There was a smaller cavity over the left auricle containing thin ichorous pus, also with

thick and velvety walls. The remainder of the pericardium showed considerable thickening, with complete firm adhesion between its layers. The wall of the left ventricle was hypertrophied and the myocardium generally was of good colour and consistence. The mitral orifice admitted the tips of two fingers only and the tricuspid orifice was somewhat dilated, but there was no structural valvular disease. The base of

The illustration shows the interior of the left ventricle. The abscess in the pericardium contained horsehair on one side and cotton-wool on the other. Note the thickening of the visceral pericardium.

the aorta showed one or two small atheromatous patches. After dissection the heart and pericardium weighed 420 grammes. There were a few ounces of thin watery fluid in each pleura and some old firm adhesions. The right lung weighed 750 grammes and the left lung 540 grammes. They were very œdematous and had some hypostatic consolidation at the bases. The liver weighed 1360 grammes. It was congested and friable; the capsule was abnormally adherent, and on stripping left a coarsely granular surface. The spleen (which weighed 160 grammes) was somewhat enlarged and tough in consistence. The right kidney weighed 120 grammes and the left 150 grammes. The capsule in each was thickened and adherent, and in the cortex of each were many thin-walled cysts of various sizes. The cortex itself showed atrophy. The peritoneum contained a few ounces of clear watery fluid.

Remarks.—In this case the pericardial adhesion was evidently of old standing, as proved by its dense, firm, and inseparable nature. Probably the starting-point of the condition was an attack of acute or subacute pericarditis, as, according to Dr. F. T. Roberts,[1] this is the cause in the large majority of such cases. The only record of such an illness is in January, 1892, that is, nearly eight years before the patient's death. That the existence of pericarditis was not then discovered is not altogether surprising if one considers the demented condition of the patient and also that influenza was prevalent at the time. This supposition is supported by the fact that after this attack the patient never enjoyed good health. In all probability a chronic sero-fibrinous effusion became converted into a general purulent accumulation at a later date, a change possibly caused by the carbuncle which he suffered from in the following year or by the co-existing Bright's disease. Gradual absorption would then take place with the formation of the dense, firm adhesions, leaving the encapsuled collection of pus over the left ventricle, a situation to be expected on account of its wide range of movement.

I am indebted to Dr. J. T. Callcott, the medical superintendent, for permission to record this case.

Newcastle-on-Tyne.

[1] A System of Medicine, Professor T. Clifford Allbutt, 1898, vol. v., p. 780.

SOME CASES SHOWING THE USE OF "GAS AND OXYGEN" AS AN ANÆSTHETIC IN CERTAIN OPHTHALMIC OPERATIONS.

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IN some ophthalmic operations a general anæsthetic is needful, ether or chloroform being the more commonly used. As many of these operations are but short ones the use of gas and oxygen whenever possible will obviously have great advantages over the other two anæsthetics. During the last two years I have administered the mixture in the 11 cases noted below in order of time. They were not specially selected by myself as suitable ones for "gas and oxygen," but I was asked to give the mixture and did so successfully in most of them. Hewitt's apparatus was used.

CASE 1. *Removal of a small suppurating tumour of the eyebrow* (with Dr. Wood White on March 26th, 1898).—The patient was a young man, very nervous, and rather unhealthy-looking. Operation was performed in the consulting-room. The patient had a very light breakfast four and a half hours before. He took about two minutes to get under. The indicator at first was at 2, then gradually moved on to 8, where it was kept. When under the pupils were rather dilated and the eyeballs were insensitive and fixed; he was breathing quietly—snoring; his colour was as before anæsthesia; at the end of the fourth minute air was admitted, thinking the operation over, and conjunctival reflex returned. Inhalation was resumed till the end of the operation, no inconvenience being caused to the operator. The pulse was regular, rather slow, and of good volume. The duration of the operative anæsthesia was a little over four minutes. Good recovery ensued, although the patient was rather dazed and incoherent of speech for a few minutes. The operator did not find the apparatus in his way.

CASE 2. *Tenotomy for strabismus* (with Dr. Wood White).—The patient was a girl, aged 14 years, strong and healthy, who came from a town about 30 miles away. She took the mixture exceedingly well: she had a good colour throughout and was allowed a little air once. There was no eye congestion. Operative anæsthesia lasted about two minutes. The eyeball moved rather awkwardly once or twice, but the body was absolutely still. There were no after-effects. The patient caught the next train back in half an hour very comfortably.

CASE 3. *Tenotomy for strabismus* (with Dr. Wood White).—The patient was a girl, aged 16 years. Operation was performed in the consulting-room. There was perfect anæsthesia with absolute stillness of the eye and absence of congestion. Operation lasted about one minute. There were no after-effects whatever.

CASE 4. *Tenotomy of the internal rectus for strabismus* (with Mr. Eales at the Eye Hospital, Birmingham).—The patient was a boy, aged nine years. He took the anæsthetic well, but the operator found the facepiece rather in the way and had therefore to work more slowly than usual. Towards the end of the operation there occurred some respiratory obstruction, owing probably to the tongue falling back, and a very slight congestion resulted. Rapid recovery ensued.

CASE 5. *Tenotomy for internal strabismus* (by Mr. Eales at the Eye Hospital).—The patient was a delicate girl, aged about seven years. There was a little cough at first, but she was soon under. The facepiece was kept applied till the operation was almost finished. There was no congestion. After removal of the facepiece there was retching for about half a minute and the patient then vomited about half an ounce of fluid. Mr. Eales admitted that the mixture was much better than "gas" alone and proposed on future occasions to operate quickly after removal of the facepiece.

CASE 6. *Excision of the eye* (at the Eye Hospital, Birmingham).—The patient was an old woman, aged between 65 and 70 years. She was very nervous and restless. She was edentulous. The head was in the mid-line. I could not get the facepiece to fit as air entered at the sides owing to absence of the teeth and absorption of the jaws. I could not get her under so gave chloroform, which the patient took well. After removal of the eyeball a communication of the orbital with the cranial cavity was found and I had to administer chloroform for about 15 minutes. Gas and oxygen would have been rather difficult to administer for so long for such an awkward eye operation, and as matters turned out there would have been no special advantage in using the mixture, but rather the reverse.

CASE 7. *Operation for entropion* (with Dr. Wood White).—The patient was a woman, aged between 65 and 70 years, in good health. Her head was a little raised on three pillows. She took the mixture quietly. Good anæsthesia. The indicator was kept at 8 or 10. The head being in the mid-position the patient began to snore and presently got a little blue owing to respiratory obstruction, causing some venous oozing in spite of plenty of oxygen, so I removed the facepiece and by manipulation restored a free air-way and then re-applied the facepiece, and anæsthesia was continued without recovery. Towards the end a little phonation was heard, but it disappeared on putting back the indicator to 6. The operator stood behind the patient's head. Recovery was rapid and the patient complained of no after-effects at all. Operative anæsthesia lasted four minutes.

CASE 8. *Tenotomy for strabismus* (with Dr. Wood White).—The patient was a woman, aged about 30 years. Operation was performed in the consulting-room. The patient was very nervous at first, laughing hysterically, but she gradually became quiet. There was good colour throughout; she was allowed two breaths of air. Excellent anæsthesia. Quiet, full recovery in from two to three minutes.

CASE 9. *Excision of small tumour of the right upper eyelid* (by Dr. Wood White).—The patient was a healthy young man, aged about 23 years. Operation was performed in the consulting-room. He took the mixture well and quietly. Once or twice the patient very slightly raised the right forearm and hand, but not inconveniently. He was slightly cyanosed at one time because I did not give him enough oxygen. Operative anæsthesia was just five minutes. Quiet recovery with no after-effects.

CASE 10. *Tenotomy of the right internal rectus for strabismus* (with Mr. N. H. Turner and Mr. Priestley Smith).—The patient was a girl, aged four years. The child was stout, healthy, cheerful, and tractable. She was shown the apparatus and bags beforehand and induced to try to blow into them for amusement; she was then put on the table. The child took the mixture admirably, only once lifting her arms. The head was in the horizontal mid-line position. I used the latest pattern of Hewitt's stopcock and beginning with the indicator at 2 I quickly moved it on to 8 and kept it mostly between 8 and 10, but occasionally opened the extra 10 inlet. A little cocaine was dropped into the eye before the conjunctival reflex had disappeared and when the operation was begun the eyeball was fixed, perfectly insensitive, and the pupils were of moderate size. The colour of the patient was very good throughout. The operation lasted from one to one and a half minutes as nearly as I could judge and during it the pulse and respiration were perfectly even and good. Recovery was very rapid and perfect, the child beginning to talk of many things in about a minute after removal of the facepiece and there were no after-effects. The child was not even fretful. Mr. Priestley Smith afterwards remarked that there was less congestion of the eyeball than there would have been during chloroform narcosis. This was a most successful case, for there are generally difficulties in administering gas or gas and oxygen to small children.

CASE 11. *Scleral puncture for recurrent glaucoma of the left eye* (with Mr. Priestley Smith).—The patient was a man, aged 60 years. The right eye had been already removed. The patient was of medium height, muscular, strong, and bearded. He lay in bed sideways to the window, the head of necessity being in the mid-line. As to the depth of anæsthesia I had, of course, to depend on respiration and colour chiefly. After well wetting the beard the facepiece was applied and the mixture was administered. The patient went under quietly, but when deep anæsthesia was attained the tongue fell back, with consequent cyanosis, venous engorgement, especially in the eye, and respiratory embarrassment. However, the operation was begun, the apparatus was removed, and by well pulling forward the chin proper breathing quickly returned and the venous engorgement disappeared. The patient then began to phonate a little, so more of the mixture was given, but a lighter anæsthesia was maintained till the operation, which was only a very short one, was finished, no further trouble occurring. The whole period of anæsthesia lasted about one and a half minutes. Recovery was extremely rapid and the patient declared that he had felt nothing of the operation, which, however, caused severe after-pain, necessitating the injection of morphia. Had it been possible in this case to have kept the patient's head on one side the respiratory embarrassment probably would not have occurred. I generally find that in children the head can be easily maintained in the horizontal mid-line position without causing falling back of the tongue; but in adults, and especially in strong plethoric men of middle age, it is often otherwise, more particularly when nitrous oxide is being administered.

Remarks.—I have not yet had an opportunity of trying the mixture for iridectomy or uncomplicated excision of the eyeball. Probably a deep enough anæsthesia for most eye operations is attainable in properly selected cases. Dexterous management is of course necessary in using the rather complex apparatus and the more so as the facepiece and stopcock are so near to the region of operation. It will be observed that the age of the youngest patient was four years and that of the oldest between 65 and 70 years.

The special advantages of using gas and oxygen in eye work are: (1) the almost absolute safety of the mixture, which is the safest anæsthetic known; (2) the rapid induction of anæsthesia, the patient being under in less than two minutes; (3) the induction is without incident and the maintenance in the best cases is quite sleeplike, while full recovery occurs in less than two minutes; (4) the absence of after effects, the patient being able to leave the room in a very few minutes; (5) the eyeball is fixed, the orbicularis muscle is relaxed, and congestion can be entirely avoided by the allowance of sufficient oxygen, while there is no retching, sickness, cough, straining, or unconscious after-movement causing increased intra-ocular vascular tension; (6) the upright chair or semi-recumbent position on a couch can be conveniently and safely assumed; and (7) this method of anæsthetisation is, for several of the above given reasons, admirably adapted for consulting-room work.

If there be any doubt as to the success of the administration it is perhaps well to have an ether inhaler, ready charged, to hand. It is not advisable to give chloroform after the mixture. With regard to limitations in usage it is not judicious to give gas and oxygen to big, strong, or much bearded men, to alcoholics of either sex, or to very young children, especially for delicate operations. In Case 6 it was impossible to give it to an edentulous and restless old woman. In adults especially it is important to keep the patient's head turned to one side to prevent obstruction to respiration, and in some cases the jaw must continuously be pushed forward to keep a free air-way. There is the disadvantage to the mixture that in operations immediately followed by pain the patient awakes at once to the sense of it and it may be necessary to inject morphia. Nevertheless, even if this be so, the absence of such after effects as retching, vomiting, &c., which so often follow the administration of ether and chloroform, will alone more than compensate for the rapid awakening to pain. Occasionally the operator may find the facepiece in his way, but after a little experience he will probably be but little, if at all, inconvenienced.

After all, the greatest good can be obtained from this or any other anæsthetic by giving it to the most suitable patients and not by administering it indiscriminately in any or every case. Personally, I have been, on the whole, very pleased with the success attained, especially in the operations for strabismus, and in that particular one on the little child, aged four years (Case 10). I think that these cases show that gas and oxygen may be often used with advantage in certain ophthalmic operations. It does not seem quite fair to the patient, if the operation be of short duration, as is very frequently the case, to subject him to the risks attending the induction and maintenance of anæsthesia by

chloroform or ether and to the unpleasant after effects of these drugs if such a substitute as gas and oxygen can possibly be employed.

Birmingham.

ON A FATTY TUMOUR OF THE ASCENDING COLON; ENTERECTOMY; RECOVERY.

BY J. BLAND-SUTTON, F.R.C.S. ENG.,
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IT has long been known that lipomata occur in the submucous coat of the stomach, jejunum, ileum, and colon, and they have been reported as forming one kind of rectal polypus. I have always been disposed to regard them as pathological curiosities until the case which forms the subject of this record came under observation.

Mr. W. Gifford Nash of Bedford asked me to see a man, 44 years of age, on account of trouble connected with the large bowel on the right side. The patient had suffered certainly for seven years from indefinite disturbances of the intestines; eventually the seat of trouble was localised in the neighbourhood of the cæcum. A physician of repute regarded the condition to be chronic inflammation of the cæcum and Mr. Nash strongly inclined to the opinion that the mischief was due to old appendicitis.

In November, 1899, the patient had a violent abdominal seizure and threatened intestinal obstruction. The rectum was emptied by enemata and obvious resistance could be felt in the region between the cæcum and the umbilicus. The pain was subsequently definitely centred in that spot throughout the rest of the illness. From this time onward the patient became liable to attacks of colic and a sensation as though something was being forced into the cæcum and on manipulation the lump could be passed upwards towards the umbilicus. By careful attention to the bowels the frequency of the attacks was diminished, but the urgency with which the attacks of colic appeared made the patient anxious for his life. In January, 1900, he sought the advice of Dr. W. Cayley. There was no difficulty in recognising the presence of a definite fairly mobile lump in the neighbourhood of the cæcum. Of its nature we could not be certain, but the long history of the symptoms encouraged us to dismiss carcinoma. In January I performed cœliotomy and exposed the cæcum. Two inches below the ileo-cæcal valve a lump could be felt in the colon. The abdominal cavity was isolated with sterilised dabs and an incision was made over the tumour. This was ovoid, one pole being embedded between the mucous and muscular coats; the remaining two-thirds of the tumour, covered with mucous membrane, projected into the lumen of the ascending colon. On splitting its capsule I was astonished to find a large lipoma. After enucleating it the mucous coat was sutured with a continuous silk suture and the muscular and serous coverings were drawn over it with interrupted silk sutures. The line of sutures remained exactly under the abdominal incision and I deemed it prudent to retain it in relation with the wound by means of a thin narrow strip of gauze. The margins of the wound were secured in three layers and dressed with gauze and Gamgee tissue. Recovery was uneventful and the patient is in excellent health.

The tumour is a lobulated lipoma weighing two ounces. Although it burrowed between the mucous and muscular coats of the bowel I think that it probably arose in the subserous fatty layer, because when engaged in removing the tumour I noticed a deep dimple in the serous investment of the colon immediately over the attached pole of the tumour. Mr. Stabb operated upon a man for acute intussusception of the ileum due to a lipoma and he draws attention to an infundibular recess in the serous coat of the gut at the base of the tumour.[1] The lipoma which forms the subject of my communication is preserved in the museum of the Royal College of Surgeons of England.

Queen Anne street, W.

[1] St. Thomas's Hospital Reports, 1897.

A CASE OF INCOMPLETE DEVELOPMENT OF THE THIRD AND FOURTH RIBS.

BY F. B. JEFFERISS, M.R.C.S. ENG., L.R.C.P. LOND.

As there are only a limited number of these cases published I take the opportunity of describing the following instance which occurred in a rather poorly nourished boy, aged 12 years.

On inspection the right side of the chest presented obvious flattening and a deficiency in muscular covering which gave it a very wasted appearance. There was no nipple on this side. On abducting the right arm the anterior axillary fold was represented by a well-marked fold of skin extending from the level of the fourth costal cartilage to half-way down the arm; there was no muscle whatever in this fold. The first and second ribs appeared to be quite normal but seemed rather close together. Between the lower margin of the second rib and the upper margin of the fifth there was an obvious deficiency in the bony chest wall which extended out as far as the mid-axillary line. This space was covered by normal skin and under this was seen

The illustration shows the want of symmetry owing to the incomplete development of the third and fourth right ribs.

and felt a firm yielding fascia-like structure which was made up of tense vertical bands. One especially strong band extending between the second and fifth ribs at their union with their cartilages was well seen on deep inspiration. The right free margin of the sternum was easily felt with the prominences for articulation with the third and fourth costal cartilages. In the mid-axillary line a hard ill defined prominence was felt which seemed to be the free end of the third rib. Half an inch below this the fourth rib was felt to run downwards towards the fifth and became indistinct apparently above and behind it at the anterior axillary fold. There was no trace of the pectoralis major on the right side, while the pectoralis minor was represented by a small but very strong muscular slip extending between the coracoid process and the first rib, near its cartilage. The right deltoid was more developed than the left. The boy has complete use of his right arm notwithstanding this deficient muscular development, all the movements being perfect, including

good expansion of the chest. The deficient side measured 12½ inches from the middle of the sternum to the spine at the nipple line as compared with 13¼ inches on the left side. There was slight lateral curvature of the spine in the upper dorsal region with the convexity on the right side and a compensatory curve in the lumbar region.

Chatham.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prooemium.

KING'S COLLEGE HOSPITAL.

A CASE OF PRESSURE ON THE LEFT BRONCHUS; RECOVERY.

(Under the care of Dr. NORMAN DALTON and Dr. GREVILLE MACDONALD.)

COMPRESSION of the trachea by a gumma must be a condition of decidedly rare occurrence, and that in this case the gumma was external to the trachea and not in the substance of the wall is rendered almost certain by the signs of concomitant pressure on the aorta. Syphilitic disease of any form is rare in the trachea, and Morell Mackenzie[1] met with only three cases out of 1145 cases in which the pharynx, larynx, or trachea was affected. The fact that treatment with potassium iodide was followed by the disappearance of the swelling and of the symptoms and signs is very strongly in favour of the mass being gummatous, but several of the granulomata tend to diminish in size under the administration of this drug.

The patient was a man, aged 34 years. He was an old soldier and had been a prison warder for the last eight years. He had been quite well until six years before admission, when he began to suffer from a pain between the shoulders. This pain when present was continuous, but it was occasionally absent for two months at a time. It was sometimes so severe that he could not lie down. He was first seen in the out-patient room by Dr. Dalton. In addition to the above symptoms the patient complained of cough and difficulty of breathing and he said that for the last few days he had been bringing up blood through the nose. He was not aware of any alteration in his voice. The pain was now chiefly under the left shoulder-blade, but extended round the left side to the epigastrium. On examination it was found that there was considerable difficulty in breathing, the inspiration being forcible, while the chest did not expand freely. His distress was obvious, but still not so acute as in laryngeal obstruction. The only abnormal physical signs which could be detected in the thorax were as follows: (1) the air did not enter freely into the lower lobe of the left lung; (2) there was a sibilus to be heard over the left bronchus between the scapula and the vertebræ, at every inspiration, the breath sounds elsewhere being normal; (3) there was some tenderness over the spines of the dorsal vertebræ from the fourth to the eighth; and (4) the second sound over the aortic valves was accentuated. A provisional diagnosis of pressure on the lower branch of the left bronchus was made and on Dec. 14th, 1898, the man was admitted into the wards under the care of Dr. Dalton.

Further examination confirmed the presence of the physical signs which have been mentioned and, in particular, after repeated examinations it was certain that the air did not enter freely into the base of the left lung and that there was always a sibilus over the left bronchus. In addition it was thought that there was a slight diminution of resonance on percussion at the left base and that the left side of the chest did not expand so freely as the right, but the differences, if any, were extremely slight. No physical signs of an aneurysm could be detected, but from time to time a faint systolic murmur could be heard over the front of the chest, not at the apex but a little above the left nipple. This bruit could be best heard when the lungs were emptied as much as possible by a full exspiration. It was not audible over the back. During his first few days in the wards the patient's breathing continued difficult and he did not sleep well. He did not complain of dysphagia but it was noticed that he washed down any solid food which he was given with more fluid than is usual. The diagnosis of pressure on the left bronchus appeared to be confirmed but it was not possible to detect what the cause of the pressure might be. No history of syphilis was obtained but iodide of potassium was given from the first.

As a further help to diagnosis Dr. Greville MacDonald was asked to examine the larynx. He reported that the larynx was normal, but that he could distinctly see a bulging inwards of the trachea on the left side, just above the bifurcation. The projection was of about the size of a segment of a cherry and he was quite sure that it did not pulsate. This examination was made during the first week of the patient's stay in hospital and, although it is possible for an aneurysm filled by hard clot to cease to pulsate, the treatment by iodide of potassium was now pushed in the hope that the swelling might be a gumma. By Dec. 28th, a fortnight after admission, the breathing was much easier and the patient slept better. It may be mentioned that he did not bring up any blood while he was in the hospital. On Jan. 6th, 1899, he left the wards, but was kept under observation as an out-patient by Dr. MacDonald and Dr. Dalton. The patient continued to improve and when last seen there was no difficulty of breathing, the air entered the left base freely and the projection into the trachea had entirely disappeared. The faint bruit had become inaudible before he left the hospital and was probably due to pressure of the gumma on the aorta. The patient has now been lost sight of but it has been ascertained that in September, 1899—i.e., eight months after he left the hospital—he was well. It is clear that there was a growth at the root of the left lung, bulging slightly into the trachea as could be seen and compressing the lower branch of the left bronchus as shown by the physical signs. It must therefore have been rather a diffuse mass for which reason it might be supposed to have consisted of enlarged glands, but its disappearance under iodide of potassium suggests that the lesion, whether glandular or a diffuse infiltration, was syphilitic in its origin.

[1] Diseases of the Nose and Throat.

NEW YORK POST-GRADUATE HOSPITAL

A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.

(Under the care of Dr. STEPHEN SMITH BURT.)

OF the theories which have from time to time been advanced in explanation of the phenomena of acute yellow atrophy of the liver there is none which is more probable than that which ascribes the disease to a toxin absorbed from the alimentary canal by the radicles of the portal vein. The liver would certainly bear the brunt of such an attack, though other organs would also suffer, but in a less degree, as the poison would reach them in a more diluted condition. The changes produced in the liver-cells by phosphorus closely resemble those present in acute yellow atrophy, but with phosphorus the liver is enlarged in place of being diminished in size. Dr. Burt's case is of great value, because it was under observation from the very beginning.

A girl, aged 13 years, was admitted into the New York Post-Graduate Hospital on Oct. 29th, 1897. Her father was insane, but otherwise the family history was negative. The patient had an attack of measles when she was four months old and later suffered from diphtheria; she had cervical adenitis when she was a baby. Four years before admission she had facial erysipelas and soon afterwards suffered from chills and fever; she had never had rheumatism. For several years before admission she had had shortness of breath on exertion which had steadily increased. One year before admission the abdomen began to swell and it had continued gradually to grow larger. During the past year there had been puffiness under the eyes and the legs had been œdematous. The nose had bled a number of times and now and then bleeding from the ears and gums had occurred. The appetite was good, the bowels were regular, and she slept well. She had been slightly jaundiced for six or eight months; this yellow discolouration of the skin had recently increased. Examination of the urine showed that the

reaction was acid and that the specific gravity was 1015; the colour of the urine was red, the consistency was fluid, and the sediment resembled brick-dust. On chemical analysis of the urine a trace of albumin was found but no sugar. Microscopical examination revealed the presence of a large number of granular and epithelial casts, of renal epithelium, and of bacteria in large numbers. At the last examination of the urine made on Oct. 31st, 1897, there were blood-casts in abundance and a large amount of blood. There is no record of the presence or of the absence of leucin and tyrosin.

Physical examination of the patient upon admission revealed the presence of mitral insufficiency; the area of cardiac dulness was increased with diffused apical impulse. The abdomen was distended with fluid, the liver was enlarged, and superficial veins were prominent. The spleen was not made out. The lower extremities were œdematous. On Nov. 7th 57 ounces of fluid were withdrawn from the abdomen by an aspirator. On the 17th a small incision under cocaine was made in the median line in the abdomen, a drainage-tube was passed into the abdominal cavity, and 54 ounces of fluid were removed. The tube was left in for permanent drainage. Later (on the 21st) it was removed. During this time notes were made recording the recurrence of frequent hæmorrhages from the mouth. There was vomiting on the 25th, 26th, and 27th. The temperature was normal, except from the 18th to the 21st, during the retention of the drainage-tube.

On Dec. 1st the patient came under Dr. Burt's care and observation. Physical examination revealed a systolic murmur, loudest at the apex and transmitted to the left; the apex beat was below and beyond the normal position with a fairly strong impulse. The diagnosis arrived at was mitral insufficiency with compensatory hypertrophy re-established. The lungs were examined with a negative result; the liver was decreased in size and the spleen was enlarged; the patient was deeply jaundiced. The ascites and œdema had disappeared; the temperature was normal. For the next three or four days the patient was up and about and even went down from the ward to the clinic. On Dec. 4th there was epistaxis and again on the 6th. The decrease in the size of the liver and the increase in the size of the spleen were more pronounced; the vertical measurement of the liver was three inches in the right mammillary line. The action of the heart was weak. She had in the meantime taken to her bed and her mental condition was reported as dull, stupid, and, finally, semi-comatose. On the 7th it was noted that she had vomited during the previous night and that she had been very restless and noisy. Again during that day she was continually rising and trying to get out of bed. Her pulse had risen to 116 per minute and her temperature ranged from 100° to 102° F. On the 8th she was exceedingly restless and irrational and noisy even to screaming. The liver measurement was not quite two inches in the right mammillary line. The tongue was dry and reddish brown in colour; sordes was on the lips and teeth. The heart was weak and rapid. On the 9th the heart was rapid, weak, and irregular, beating 140 per minute, the respirations were 40, and the temperature was 102°. The liver had decreased in size almost to the point of entire disappearance. The jaundice seemed to be even deeper than it was before. There were involuntary movements of the extremities, hæmorrhage from the mucous membrane of the mouth, and vomiting. The patient had been comatose since 11 o'clock on the previous night; the temperature was 101° and the pulse was almost imperceptible. The patient died at 8 P.M. Permission for a necropsy was requested but unfortunately was not granted.

Remarks by Dr. BURT.—Inasmuch as acute yellow atrophy of the liver is an exceedingly rare affection the above case is placed upon record. Up to this time about 250 instances of the disease have been reported. Murchison states that only one case occurred among 30,000 patients in the period of six years at the London Fever Hospital. There is no mention of this disease in Vols. I.–VII. of the Johns Hopkins Hospital Reports. Nor was a case published between 1890–99, including Vols. VI.–XIV., in the *Post-Graduate*. Indeed, there is no memorandum of a previous case of acute yellow atrophy of the liver in the Post-Gradnate Hospital since its foundation. In the Transactions of the New York Pathological Society from 1876 to 1893 there are five cases recorded. In the *Boston Medical and Surgical Journal* from 1885 to 1899, comprising Vols. CXV.–CXLI., there are three cases published. Among the proceedings of the Pathological Society of Philadelphia from 1857 to 1899, including Vols I.–XX., there are but two cases narrated, with, in addition, an account of the examination of a specimen of urine from another. It is stated that "this disease is characterised anatomically by a rapid diminution in the size of the liver as the result of a granular and fatty degeneration and disintegration of the liver-cells"; and also that "it would seem that there is an initial inflammatory period of short duration, from the frequently perceptible enlargement in the beginning." Delafield and Prudden state that "the cause of the disease is unknown and it is doubtful whether it is a disease primarily of the liver or a general disease with local lesions." My own observations incline me to the belief that it is a general disease with the liver as the chief seat of local manifestations. Some authorities consider it to be an infectious disease and others a species of auto-intoxication. Certainly its occurrence among a number of persons closely associated, and at the same time isolated, from the rest of the world, as were a number of sailors, bears with it a suggestion of infection. Likewise, several members of the same family have suffered from its blight consecutively. Yet it may be due, as Tyson says, "to the action of some virulent poison, possibly autogenetic, the nature of which is as yet undiscovered."

The disease is said to occur more commonly among women and to be more likely to appear as a complication of pregnancy. Nevertheless, it has been noted with frequency, relatively speaking, in men and among both sexes in childhood. Without doubt it is a disease of early life. Among the exciting causes are mentioned syphilis, pregnancy, intemperance, and, above all, great mental agitation. Notwithstanding this, in the history of the above case there was not a causality of syphilis, pregnancy, or intemperance, nor yet of perturbation; but there is a possible connexion between the drainage tube which was inserted in the abdomen for ascites and an infection, in view of the presence of fever during the retention of this foreign substance.

Of the 11 examples, including my own, which I have collated, one succeeded criminal abortion, one came two months after child-birth, one occurred at the sixth month of pregnancy, one was thought to be due to infection from pyosalpinx during a surgical operation, one was possibly caused by injuries due to brutality, one followed drainage of the abdomen, and of five no particular sequence was mentioned. Three were males and seven were females, and the sex of one was not given. The ages of the patient were as follows: one, 13 years; one, 21 years; one, 22 years; one, 24 years; one, 29 years; one, 30 years; one, "between 20 and 30" years; and one, 40 years; while the ages of three were omitted. In a case published by F. C. Shattuck of Boston the absence of fever and of leucin and tyrosin in the urine was especially remarked. Osler states that these crystals are not distinctive of acute yellow atrophy of the liver. Of the 11 instances here cited the presence of leucin and tyrosin was noted in two, their absence in one, and from being simply pathological specimens or from a failure to make the examination in eight the subject, except in one case, was practically ignored. In four patients the temperature was either normal or sub-normal, in two of whom it suddenly rose to 105° F. just before death.

An interesting case, published by A. F. Holt of Cambridge, was called acute *red* atrophy of the liver. He makes the distinction that *red* atrophy is a more acute form of what is commonly designated as *yellow* atrophy. Delafield and Prudden make no such differentiation. "On section [of the liver] the cut surface may show but little trace of lobular structure but presents an irregular mottling with grey, ochre-yellow, or red, sometimes one, sometimes another colour preponderating."

In the above case we have the history of a patient who came to the hospital for chronic endocarditis and its consequences but who developed acute yellow atrophy of the liver, certainly by Dec. 6th if it had not begun on the 1st, and who died on the 9th. Contrary to the statements of some authors, but quite in accord with others, fever was not a prominent symptom. If it was not an infection through the opening made in the abdomen it is difficult to account for the disease in this instance. Previously to my first examination her liver was reported to be enlarged, which conforms to the statement that "in a few cases a slight increase in the area of liver dulness has been noticed in the early stages of the

disease." There were evidences of renal as well as nasal and buccal hæmorrhages. It is to be regretted that neither leucin nor tyrosin was looked for in the urine. The increased size of the spleen and the rapid decrease in the size of the liver were easily demonstrable owing to the freedom from gas in the intestines.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Excision of the Gasserian Ganglion for Trigeminal Neuralgia.—The Causes of the First Sound of the Heart.

A MEETING of this society was held on May 14th, Dr. FREDERICK T. ROBERTS, the President, being in the chair.

Mr. J. HUTCHINSON, Jun., read a paper on Excision of the Gasserian Ganglion for Epileptiform Neuralgia of the Fifth Nerve. He narrated briefly a series of cases in which he had performed this operation by the method of trephining through the floor of the temporal fossa and lifting up the dura mater and temporo-sphenoidal lobe. The first of these cases was operated on two and a half years ago and in all of them the neuralgia had been completely cured. Atrophy of the masticatory muscles on the affected side, which was a necessary sequence of the operation, caused very little inconvenience, but if the ophthalmic division had been completely divided (which the speaker believed to be unnecessary in many cases), there was some risk of the anæsthetic cornea undergoing ulceration, and this might happen at any date after the operation. In only one of the cases brought forward had this unfortunate result occurred, and this patient had suffered from conjunctivitis before the operation. Mr. Hutchinson urged that the temporal route (Hartley Krause method) was the only one by which the Gasserian ganglion could be really exposed, and mentioned that in one of his cases a prolonged attempt had been made previously by another surgeon to remove the ganglion from below after division of the zygoma, &c. The neuralgia had returned worse than ever and at the second operation Mr. Hutchinson found the ganglion and its branches quite intact. He thought it probable that intracranial division of the superior maxillary nerve would supersede the so-called excision of Meckel's ganglion in cases of neuralgia confined to the upper maxillary division, and urged that excision of the Gasserian ganglion should be resorted to in cases of inveterate neuralgia of the fifth nerve in preference to a series of palliative operations on its branches, and before the patients were completely worn out by pain and want of rest. The deformity left after the operation was trifling, the scar being situated within the margin of the hairy scalp, and the relief appeared to be permanent.—The PRESIDENT remarked on the use of the word "neuralgia." He thought that a good many cases so called were in reality due to organic nerve lesions, though nothing very definite was found in the way of structural change. Sometimes, however, there might be a fibroid thickening, as in some of Mr. Hutchinson's cases. He thought they ought to try to find out what the change was in neuralgic cases. The treatment of these cases of inveterate trigeminal neuralgia was very difficult and it was a great advantage to know that an operation such as this could be performed which would give relief to this most troublesome condition.—Dr. A. E. SANSOM complimented Mr. Hutchinson on his admirable contribution. He would like to know what was the kind of case for which the operation was most suitable. He supposed that when the pain was exceedingly acute and exceedingly protracted the operation would be of great service. In such cases many remedies were tried without success.—Mr. HUTCHINSON, in reply, said it was unsatisfactory not to be able to assign a lesion to these cases. In one case he had seen reported a neuroma had been found and this tended to confirm the President's suggestion of fibrosis. As to which cases were suitable and when the operation was justifiable, in all of his cases the neuralgia had lasted at least five years, but he thought that two or three years would be long enough to wait. These patients deteriorated, especially when they took to morphia, as they so often did. In some cases the pain was confined to one branch, and these could be cured by a more limited operation. A free removal of the affected branch would suffice. But if the pain affected two divisions and had an epileptiform character, if it had lasted at least a year, and the patient was running down hill, then the operation should be performed. This operation left no stiffness of the lower jaw; other operations were much more elaborate and they left greater scars and more often failed.

Dr. ALEXANDER MORISON read a paper entitled a Clinical Study of the Causes of the First Sound of the Heart, which will be found *in extenso* on p. 1430 of the present issue of THE LANCET.—Dr. A. E. SANSOM remarked that a great many views had been suggested as to the causes of the heart sounds, especially the first. He thought it a very important and valuable fact that extensive disease of the cardiac valves could exist without any murmur at all. He could not agree that all the old views were disproved. Tension must, he thought, play an important part. There were a good many cardiac structures which could be thrown into a state of tension. In some of the most hypertrophied hearts he had seen there had been no first sound at all. In cases of mitral stenosis with very thick muscular walls he had sometimes wondered how a very sudden first sound could be produced. He could not believe that the condition of the blood had really much to do with the heart sounds. The impact of blood on solid structures might produce the sounds, but not blood against blood. Tension, whether of muscle or other tissue, might produce heart sound; and he believed tension was the cause of the first heart sound.—Dr. ROBERT MAGUIRE said he would confine his remarks to the cause of the first heart sound. He disagreed with Dr. Morison in some respects, but believed he was correct in the main. He believed that Sir Richard Quain was correct and that the first sound was produced by one column of blood shooting through another column of blood. He doubted if muscular action took any part in the production of the sound. Physiologists were apt to be dogmatic, but clinicians had opportunities of forming a judgment which was wanting in physiologists. The first sound of the heart was produced by one column of blood against another, or one bubbling through another, or by the impact of one column against another; and might not murmurs be due to the same thing modified?—Dr. MORISON, in reply, said that he had tried to show that the first sound was produced in the right ventricle. As to the precise manner in which it was produced some experimentalists were in favour of the arterial valves and some held that tension had something to do with the production of the sounds, but in his belief the main element was the blood. Sir Richard Quain had come in for a great deal of criticism, especially at the hands of physiologists, but in spite of Ludwig and his rabbits' hearts he (Dr. Morison) believed—nay, he was fully convinced—that Sir Richard Quain was right and that the first sound depended on the blood for its production.

At the annual meeting which was held previously to the ordinary meeting the following were elected as officers for the session 1900–1901:—President: Mr. John H. Morgan. Vice-Presidents: Dr. Samuel West, Mr. Howard Barrett, Dr. Isambard Owen, and Sir Wm. Mitchell Banks. Treasurer: Mr. David H. Goodsall. Librarian: Dr. Sidney Martin. Honorary secretaries: Mr. Frederick C. Wallis and Dr. Arthur F. Voelcker. Honorary secretary for foreign correspondence: Dr. William Ewart. Council: Dr. William H. Allchin, Mr. William H. Battle, Mr. James Berry, Dr. J. Mitchell Bruce, Dr. Henry A. Caley, Dr. James Calvert, Mr. Dennis J. W. Dallaway, Dr. George E. Herman, Dr. G. Washington Isaac, Dr. Robert Maguire, Mr. Alexander Morley, Mr. C. W. Mansell-Moullin, Dr. J. Baldwin Nias, Dr. H. Campbell Pope, Dr. Frederick T. Roberts, Dr. Humphry D. Rolleston, Dr. Frederick J. Smith, Mr. George R. Turner, Dr. Herbert F. Waterhouse, and Dr. Edward G. Younger.

PATHOLOGICAL SOCIETY OF LONDON.

Laboratory Meeting.

A MEETING of this society was held in the Pathological Laboratory of King's College on May 15th, the Right Hon. Lord LISTER being in the chair.

Lord LISTER, on taking the chair, thanked Professor Crookshank and the Council of the College for their reception of him and remarked on the success of the laboratory meetings.

Professor E. M. CROOKSHANK made a communication, illustrated by lantern slides, on the Flagellated Protozoa of Field Rats. 14 years ago he had written a paper on this subject. These organisms were first observed by Evans in equines in India and subsequently by Timothy Lewis in the blood of rats. Steel described them as spirilla having a long, whip-like flagellum. Some had regarded them as amœbæ. But by the aid of a very high power—viz., an oil immersion lens $\frac{1}{25}$th inch—their structure could be made out, and Professor Crookshank had found them to be more highly organised than had been supposed. They had a torpedo-shaped body and a flagellum, or rather a tractellum, in front, a stiff spike-like process behind, and one or more nuclear structures in the body. They also had a delicate undulating membrane like a fin which was their most remarkable feature. This was the usual form, but there were other forms—e.g., amœba like without flagellæ and developmental forms. The organism found in South Africa seemed morphologically different, but it would be interesting to know if it had any relation to that found in this country. It was found in about 25 per cent. of rats in London sewers, and this had led to the suggestion that they were associated with some disease, though they displayed no symptoms. But he (Professor Crookshank) had now found it in field rats with completely healthy surroundings. It could not be found in every rat examined; he had examined 10 before finding it. It was found in young as well as old rats. He had not been successful in finding it in weasels or stoats.

Dr. GEORGE DEAN described a Convenient Method of Preparing and Preserving Tetanus Toxin. It was necessary to exclude the oxygen of the air in the process of growing the tetanus bacillus and maintaining its toxicity. Reducing substances were formerly used but there was a good deal of risk with stoppered bottles which might burst and were otherwise unsuitable. Dr. Dean then described the apparatus he had designed. The bottle had an inner and an outer neck, between which was a trough of mercury, and into this a cap was dropped. The flask was nearly filled, but not quite, so as to allow for the expansion.

Dr. R. T. HEWLETT and Mr. SYDNEY ROWLAND demonstrated their New Quantitative Method of Serum Diagnosis. The blood was collected in vaccine tubes which were sealed in the usual way. In the laboratory the volume of the blood was calculated by measuring the length of the column of blood by means of a millimetre scale and the diameter of the tube by an eye-piece micrometer. The tube with its contents was then crushed with an iron-plunger in a thick-walled glass tube, the lower end of which rested in a hollowed-out block of glass. The requisite amount of the diluting fluid was measured into the hollow block and the blood washed out of the thick-walled tube by drawing up the diluting fluid several times. The dilution could then be employed for performing the Widal test.

Professor MCFADYEAN made a communication on the Passage of the Virus of African Horse Sickness through the Berkefeld and Pasteur-Chamberland filters. He first remarked that this disease had made tremendous ravages in South Africa. In one single epizootic in 1854–55 it was reported that over 60,000 horses died in the colony, at a loss of £500,000 sterling. The disease was regarded locally as a kind of malaria, but Mr. Lambert, of the Army Veterinary department, 20 years ago made a good many necropsies on animals dead from the disease, and he had regarded it as anthrax in horses. On the other hand, in 1887, Mr. Nunn concluded as the result of his experiments that it was not anthrax. It could not be transmitted to rodents or contracted by human beings as anthrax could; and he had failed to transmit it from horse to horse by inoculation. In 1894 Sander, a German naval medical officer, came to the conclusion that it was anthrax. It was to Edingham (1894–95), however, that they owed all their present knowledge. He denied that it was anthrax, from which disease it differed clinically and anatomically. He found an organism which took the form of spores and filaments. Professor McFadyean's experiments had been made with the blood from an animal which died from the disease in South Africa. He injected other horses from the blood of the first and so obtained a constant supply of infected and virulent blood. The animals seemed ill on the seventh or eighth day and mostly died on the ninth or tenth. One animal became infected by the administration of the virus by the mouth. The lesions found were characteristic. He passed various dilutions of the blood of infected animals through both the Berkefeld and the Pasteur-Chamberland filters and found that the filtrate was capable of producing the disease. Animals so treated died on the eighth or tenth day. The only organism which could be seen by the microscope and which would pass through a filter was the bacterium of bovine pleuro-pneumonia, and this required a magnification of 2000. These experiments were interesting as showing that the infective agency of this South African disease could pass these first-class filters without loss of virulency. Professor McFadyean suggested that the reason the attempt to discover the organism of a number of diseases failed was perhaps because it was not visible with the existing powers of the microscope. Filtration did not arrest the rinderpest.

Dr. W. BULLOCH and Dr. W. HUNTER communicated a paper entitled, Preliminary Communication with Demonstration of the Existence of a Hæmolytic Poison in Pyocyanic Toxin, and an Anti-hæmolytic Body in the Blood Serum of Immune Animals. They first referred to the hæmolytic properties of the blood of animals with which the blood of other animals had been injected. In tetanus there were two kinds of toxins—a tetano-spasmin and tetano-lysin; and by injecting these into animals it was possible to produce an anti-spasmic and an anti-lysic body. Dr. Bulloch and Dr. Hunter had investigated the properties of the bacterium pyocyaneum, which was occasionally, though rarely, pathogenic in man. The hæmolytic effects of three toxins on the red blood-corpuscles of the horse, rat rabbit, and monkey were tried by means of Erhlich's methods. By inoculating a goat a material could be procured which protected the corpuscles from hæmolysis.

Dr. GEORGE NEWMAN had experimented with 29 different species of animals, testing their inoculability with tubercle. He found that guinea-pigs could always be inoculated with the tubercle of mammals, but never with that of birds. As regarded fishes and reptiles he had not yet succeeded in finding a bacillus which would answer all the tests of tubercle. Tubercle tended to attack different situations in the different species; thus in birds tubercle attacked the abdominal viscera, rarely the lungs, whereas in cattle chiefly the serous membranes were affected. A little flask of inoculated pseudo-bacillus was also shown.

Dr. R. T. HEWLETT demonstrated the Indol-like Reaction given by Cultures of the Diphtheria and of the Pseudo-diphtheria Bacillus. The reaction was not obtained in cultures under four days but became marked in cultures from two to three weeks old. The substance giving the indol-red reaction with a nitrite and acid was not, however, indol, for it was non-volatile. Attempts were being made to isolate the compound which was possibly skatol-carbonic acid.

Dr. J. H. DRYSDALE gave a demonstration on his researches into the Bacillus Capsulatus Aerogenes, the so-called post-mortem emphysema of organs being due to this organism. He had found it most frequently in bodies of persons who had suffered loss of blood before death. He believed that to ascribe gangrene to this organism was going beyond the facts.

Mr. PRYCE JONES exhibited Three Members of the Group of Streptothrix Isolated from Horse-dung, Drinking-water, and Rum. It was often very difficult to grow. All the specimens existed as threads, beaded and non-beaded.

Mr. S. G. SHATTOCK exhibited specimens illustrating Infective Processes and Human Psorospermosis—Posada's case.

CLINICAL SOCIETY OF LONDON.

Acute Encephalitis following Influenza.—Operative Treatment of Gall-stones.—Pneumothorax in an apparently Healthy Man.

A MEETING of this society was held on May 11th, Dr. SEDGWICK SAUNDERS, Vice-President, being in the chair.

Dr. M. PRICKETT and Dr. F. E. BATTEN communicated an account of a case of Acute Encephalitis following Influenza in a boy, aged nine years, who, in January, 1899, suffered from a slight attack of influenza necessitating his being kept in bed for a day. He rapidly recovered and although rather languid played with the other children as usual. On the morning of the fourth day after the attack, when the French maid went to wake him for his bath, he spoke to her in French, saying that he did not want his bath and that his right arm felt funny. It was then found that his right arm was helpless. He was seen shortly after this by Dr. Prickett, who found that the boy was hemiplegic on the right side. He was

aphasic but conscious and understood all that was said to him. He now became progressively more and more drowsy and passed into a condition of coma and died 72 hours after the onset of the paralysis. The necropsy was performed nine hours after death; the dura mater and the sinus appeared to be normal, the surface of the brain was pale, and there was marked flattening of the convolutions, especially on the left side. The vessels at the base of the brain appeared to be normal, no thrombosis of the larger vessels being visible. On making a horizontal section through the hemispheres it was seen that the subcortical vessels, especially on the left side, were very much injected and stood out in contrast to the surrounding tissue. The condition was not limited to the left hemisphere but affected the right also. The basal ganglia and the internal capsule appeared to be normal. On microscopical examination it was found that there were numerous small extravasations of blood and thrombosis of the finer vessels in the subcortical regions. The examination of the cells of the cortex showed that although the cells were somewhat swollen and their staining was diffuse yet the nucleus and nucleolus were normal in situation and appearance. The medulla, pons, and cerebellum were normal. The larger vessels at the base of the brain also appeared to be normal. The case was thought to be one of thrombosis of the smaller vessels of the cortex due to some toxin of which that of influenza seemed the most probable. Reference was made to the cases published by Strümpel which, although occurring in adults, corresponded both in their clinical and pathological features with the present case. Microscopic specimens were exhibited showing the changes in the cerebral cortex.

Mr. W. H. BATTLE read a paper on three cases of Choledochotomy. After commenting on the rarity of the operation as compared with cholecystotomy and its greater danger, especially where the patient suffered from jaundice or there were adhesions to the bile-ducts, the notes of the following cases were read. Case 1.—The patient was a fat girl, aged 14 years, who was under the care of Dr. H. P. Hawkins in 1893, and who had had attacks of pain in the abdomen, not well localised, sometimes severe, for a period of six months. Nausea and headache accompanied these attacks and for these morphia was administered. The pain was referred to the umbilicus and also to the left lumbar region. There were albumin and blood in the urine; there were no casts. X-ray examination was negative. Exploration of the kidney through the lumbar incision showed the absence of stone. During convalescence from this operation she had no more attacks, but after her return home she had a severe attack, and on re-admission abdominal exploration showed the presence of a gall-stone in the cystic duct. The removal of this relieved all her pain, and when she left hospital some weeks later the albuminuria had almost if not quite disappeared. She had continued well. Case 2.—A single woman, aged 60 years (under the care of Dr. S. J. Sharkey, 1898), suffered from attacks of hepatic colic during four months. In this case the gall-bladder could be felt forming an elongated tumour rounded below and very hard to the touch; in fact, it felt as if it had contracted down on some large stones. The wall of the gall-bladder was very thick; it contained no stones, but one was found in the common duct near the duodenum and extracted through an incision in the wall of the duct. The result was very satisfactory. Case 3.—A woman, aged 49 years (under the care of Dr. S. J. Sharkey, 1899), with a history of having suffered for 18 years from attacks of paroxysmal pain with vomiting and general prostration. She had passed gall-stones and had suffered from jaundice. The gall-bladder could be felt. At the operation stones were found in the gall-bladder, the dilated cystic duct, and in the common duct (probably the diverticulum Valeri). Those in the ducts were removed through incisions in the duct walls, the opening being sutured afterwards, as in the other cases, with a single row of Lembert's sutures of fine silk. The case did well. In each case the gall-bladder was opened and emptied of its contents, being afterwards sutured in the wound and drained. The stone was held up and steadied whilst the duct was incised over it, and the bile (the quantity of which was already lessened to a great extent by the incision of the gall-bladder) was prevented from diffusion by gauze packing. In no case was there any trouble from adhesions and none of the patients suffered from jaundice. In a recent case of obstructive jaundice which he had explored he had found a distended gall-bladder which diminished in size during manipulation. A stone lying loose in it was removed, and ultimately the jaundice disappeared, making it probable that the stone had escaped into the duodenum during the operation.—Mr. BLAND-SUTTON related the details of a case in which a woman was operated upon for "gall-stones." In the course of the operation a calculus was detected in the wall of the duodenum impacted in the terminal segment of the common bile-duct. As this concretion could not be pushed onwards into the bowel or upwards into the gall-bladder the wall of the duodenum was incised and the bile papilla exposed; the calculus could be seen slightly projecting through the orifice, and after nicking the edges of the papilla a gall-stone as big as a Barcelona nut was extracted. The incision in the duodenum was sutured in two layers and the wound in the abdomen was closed in the usual manner. A narrow strip of sterilised gauze was inserted as low as the duodenum. The convalescence was retarded by an attack of suppurative parotitis on the right side due to the presence of a staphylococcus. The wound in the abdomen healed without any irritation. The nucleus of the gall-stone consisted of a collection of the bacillus coli communis. Six months later the patient was reported to be in excellent health. The chief interest of the case lay in the part which was played by bacilli in the formation of calculi. Although cases had been reported abroad there were very few cases in English literature in which bacilli had been found in biliary calculi.—The PRESIDENT remarked that in times gone by the late Mr. South or Mr. Henry Green, at St. Thomas's Hospital, would have been horrified at the idea of cutting into an abdomen for the removal of gall-stones.—Dr. F. PARKES WEBER, in regard to the sudden diminution in the volume of the gall-bladder during palpation mentioned by Mr. Battle, observed that recently the house physician at the German Hospital, whilst palpating an enlarged gall-bladder in a young man apparently suffering from simple catarrhal jaundice, felt the swelling suddenly diminish in size till it could no longer be felt. Next day the stools were bile-stained, though they had previously been clay-coloured, and it became evident that the obstruction (catarrhal?) which had been preventing the bile from entering the intestine had been overcome. In another case without jaundice a large swelling in the position of the gall-bladder rapidly diminished in size; in this case the swelling turned out to be the gall-bladder, in which a large calculus remained, the diminution in the size of the swelling having evidently been due to the escape of the fluid contents, though the stone remained.—Mr. CHARTERS SYMONS asked what were the best means to keep the duct up in place while the stone was being removed and the sutures put in. He had found a very useful method for raising the duct was to pass a silk suture above and below the stone. These sutures formed excellent guides for subsequent suturing. He thought a double row of sutures were better than the interrupted suture. What, he asked, was the best route to approach the duct? He had sometimes found it easier to reach the duct through a median incision, and quoted a case in point. In other instances he had had to divide the rectus muscle transversely. He also referred to the case of a woman deeply jaundiced. On opening the abdomen he had found a hard mass in the head of the pancreas consisting of impacted stone and subsequently it was found that the stone lay in a bed of cancer. Should the gall-bladder always be drained was another question. He had employed both methods—viz., with drainage and without it. He favoured the method, where the duct was capacious, of closing the gall-bladder and using a tampon. If the common duct was much injured it was better to drain the gall-bladder, but in other cases the wound in the gall-bladder might be closed. If a tampon was used it was not necessary in most cases to drain the wound. As to the causes of the formation of gall-stones he thought the finding of bacilli in the centre was a very interesting fact.—Mr. BLAND-SUTTON remarked that he never sutured the common duct, he simply drained the wound. He had recorded a case treated in that way in vol. XXV. of the Transactions of the Clinical Society of London and at that time the late Mr. Hulke had thought the proceeding a very risky one, but since that time he had done several cases, even of large stones, and in all of these cases he had never sutured the duct. He used a good-sized drainage-tube and had had very successful results.—Mr. BATTLE, in reply, remarked that he had met with no difficulty as to the raising of the gall-bladder or duct, for an

assistant had raised the stones until the sutures were inserted. He had not tried Mr. Bland-Sutton's plan but had employed interrupted Lembert sutures because the tension could be regulated more easily.

Dr. PARKES WEBER read a paper on a case of Pneumothorax without Effusion in an apparently healthy man. The patient was a piano-fitter, aged 31 years, without previous history of pleurisy, hæmoptysis, or pulmonary disease, and without any family history of consumption. Without any violent strain or excitement, whilst doing his work, he suddenly felt a pain like "a knife sticking into him" on the left side of the chest. His breath gradually became shorter and the pain was very much increased by attempting to walk. On arriving at the hospital shortly afterwards his respirations were about 30 and his pulse was about 65. The movements were equal on the two sides of the chest, but no cardiac impulse could be felt; the cardiac dulness was displaced to the right of the sternum and there were distinct signs of pneumothorax of the left side. When the patient was kept quiet in bed the dyspnœa and severe pain in the chest rapidly left him. No splash sound or proper metallic tinkling was ever heard and the signs of pneumothorax gradually disappeared in the course of 32 days. The first evidence of partial return to the natural condition was afforded by the absence of the bell-sound from the upper front part of the affected side of the chest. The most persistent of the abnormal signs was the displacement of the heart. During recovery from the pneumothorax the patient did not appear in any way ill. There was never any expectoration, nor any sign of pleurisy or pleuritic effusion of serum, blood, or pus. The present case and similar cases, including the rare cases of recurring pneumothorax, could be best explained on the supposition that a subserous emphysematous bulla had burst, or that a minute tuberculous nodule had broken down and opened up a communication between the air passages and the pleural cavity. Emphysema was commoner in males than in females, and practically all the cases of pneumothorax in apparently healthy persons have occurred in males. On the other hand, some cases, such as one described by Dr. S. West, seemed to have been due to slight tuberculous changes in the lung, insufficient in degree to affect seriously the general health.—Dr. PERCY KIDD referred to a case of pneumothorax in a young man who was quite suddenly seized with the affection on the occasion of a very small amount of strain, and five weeks later it had quite disappeared, although the patient had taken no care of himself. There was a tendency to cure in these cases. There was no fluid as a rule. The origin of the lesion was very obscure. It was probably either an emphysematous bulla or a subserous tuberculous patch, though very often neither of these could be discovered.

MANCHESTER PATHOLOGICAL SOCIETY.

Acute Hæmorrhagic Cystitis.—Innominate Aneurysm.—Exhibition of Specimens.

A MEETING of this society was held on May 9th at Owens College, Mr. W. THORBURN, the President, being in the chair.

Dr. ARNOLD W. W. LEA showed the specimen and microscopical section from a case of Acute Hæmorrhagic Cystitis occurring in a woman, aged 42 years. The symptoms came on seven days after operation for strangulated hernia. Free hæmorrhage occurred and the bladder became distended up to the umbilicus. The urine was ammoniacal and purulent. The bleeding into the bladder continued and the patient died 48 hours later. At the necropsy the bladder was found to be dilated and it contained two pints of offensive urine mixed with blood. The walls were thinned. There was no ulceration or membraneous exudation. All the other organs were normal. Microscopically the bladder wall showed intense round-celled infiltration of the mucosa with dilated vessels and numerous hæmorrhages into it. The epithelium had disappeared. The surface showed fibrinous exudation and blood-clots. The cystitis was probably due to local infection of virulent type.

Dr. G. J. ROBERTSON and Mr. C. RONEY SCHOFIELD showed a case of Innominate Aneurysm due to Strain. The patient, a man, aged 60 years, had severely strained himself when lifting a heavy plank, and had felt a sharp pain in his neck just above the right clavicle. On the next day he noticed a small pulsating swelling in that position. He came under observation at the Oldham Infirmary on Jan. 3rd, 1900, three months after the accident. His condition was as follows. There was a pulsating swelling of the size of a Tangerine orange above the right clavicle. It was expansile and had a patch of skin at the most prominent part thin and red. A diagnosis of innominate aneurysm involving the carotid artery was made. The patient was kept in bed for a week, dieted, and given iodide of potassium. He was getting worse and the aneurysm was apparently on the point of bursting externally. The right common carotid artery was tied just below the bifurcation on Jan. 10th. There was slight right temporal headache for a few days. There was no improvement and the tumour was becoming larger. The right subclavian artery was tied on Jan. 17th and the result was as after the first ligature. Several feet of iron wire were introduced on Feb. 2nd. The condition of the patient was very distressing. There was dyspnœa from displacement of the trachea through pressure and also broncho-pneumonia. The aneurysm was of the size of an ordinary orange and was apparently at bursting point. The skin was thin and red. 12 steel sewing needles were now introduced obliquely into the sac so as to project into it and were withdrawn every few days and fresh ones introduced. There was no bleeding. Marked improvement resulted. The pulsation became less and the skin was firmer and healthier. No electrolytic current was used. The patient died on Feb. 16th from exhaustion. Post mortem recent firm laminated clot was discerned over the anterior and lateral walls of the sac which was a large sacculated innominate aneurysm not involving the carotid. The aorta was atheromatous. There was a slight fusiform aneurysm at the commencement of the right subclavian artery, displacement of the trachea under the left sterno-mastoid, septic broncho-pneumonia, and purulent infarct in the left kidney.

Dr. E. F. TREVELYAN (Leeds) showed: 1. Six Hearts mostly with Combined Valvular Lesions. The first was a heart from a woman, aged 40 years, with combined aortic, mitral, and tricuspid stenosis. The aortic opening measured only three-eighths of an inch on the cone and the mitral opening half an inch. The heart was not enlarged, weighing only 10 ounces, and death was due to a purulent bronchitis. The second and third were hearts showing aortic incompetence and functional mitral incompetence. One was from a lad, aged 18 years, who had first suffered from rheumatism 10 years previously. There were two aneurysmal bulgings on a greatly enlarged aortic cusp, the other cusps being comparatively healthy. In the other case, which terminated suddenly, there was a pendulous mass one and a half inches long attached to one aortic cusp, the other cusps being very little affected. The fourth and fifth were hearts showing mitral and tricuspid stenosis and aortic valve disease. In one of these cases the patient died at the age of 70 years. The heart in the sixth case showed mitral stenosis, functional tricuspid incompetence and slight aortic valve disease. 2. A Handkerchief from which Diphtheria Bacilli were Cultivated 11 weeks after its last use by a child who was suffering from diphtheria of the mouth. The short bacillus was nearly always obtained in the first instance, but other forms were found in subsequent cultures. 3. Two Brains with Multiple Tuberculous Masses from children, aged one and three years respectively. In one of these there was also a central tuberculous mass in the cervical cord. Tubercle bacilli had been found in one of the lesions. There was tuberculosis elsewhere in the body in both cases.

Dr. D. ORR showed three specimens from the Pia Arachnoid in a case of Senile Dementia demonstrating an unusual form of Hyaline Concentric Body Formation. He pointed out that occasionally concentric bodies may be formed from an unusual degree of hyaline fibroid change affecting the arterioles in the pia arachnoid, causing the vessel to become occluded and giving the appearance above described on transverse section.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Centro-fixation.—The Pathology of Gout.—Complications following Gastro-jejunostomy.—Exhibition of Cases and Specimens.

THE last meeting of the present session of this society was held on May 4th, Mr. C. J. WRIGHT, the President, being in the chair.

Dr. JAMES BRAITHWAITE (Leeds) read a paper upon two cases of Ventro-fixation in which subsequently pregnancy took place and both patients were delivered at full term. In one there was a good deal of pain in the line of the incision evidently from dragging of the enlarging uterus upon this fixed point. Nevertheless, all went well in the end, but there was inertia of the uterus towards the end of the labour and forceps had to be used. In the second case the patient was practically without symptoms referable to the operation. Dr. Braithwaite emphasised the following points in this operation in order to ensure the non-interference with expansion and mobility of the uterus during pregnancy. First, the abdominal incision must be made down to, but not through, the peritoneum. Second, the peritoneum was to be opened in the upper part of the incision only. Third, the uterus was to be fixed to the peritoneum belonging to the lower half of the wound by about three catgut sutures. The point of attachment must be made as low down in the anterior surface of the uterus as possible so as just to avoid the bladder. The peritoneum in the living body was extremely moveable upon subjacent parts and the uterus was thus not anchored firmly but was allowed considerable amount of mobility. It might be supposed that when the operation was done in this manner the adhesion would not be permanent, but out of about 30 operations in only one did the uterus subsequently become free.

Dr. WILLIAM BAIN (Harrogate) read a paper entitled Notes on the Treatment of Chronic Gout based on Experimental and Clinical Investigation. Dr. Bain, in discussing the modern views of the pathology of gout, said that the evidence, although contradictory, pointed to the likelihood that uric acid and the purin bases were derived from nuclein, and if it were established that nuclein was the mother substance of these alloxur bodies it would have an important bearing on the dietetics of gout. As gout was due in all probability to abnormal metabolism their aim should be in treating the chronic varieties of this disease to prevent the formation of abnormal proteid decomposition products, to prevent the accumulation in the system of nitrogenous or other waste substances, and to promote the elimination of these products. He emphasised the importance of paying particular attention to the digestive functions and any deviation from the normal should be counteracted by appropriate medicinal and dietetic treatment. In referring to diet he mentioned the results he obtained with experimental diets in a case of chronic gout and considered that those who advocated an exclusively vegetable diet in this affection did not take a sufficiently broad and comprehensive view of its pathology. Dr. Bain discussed the value of guaiacum, colchicum, iodide of potassium, quinine, and sodium salicylate in the treatment of gout, and spoke favourably of the Harrogate old sulphur spring, the beneficial effect of which he ascribed to its cholagogue action. Regarding biurate solvents he did not know of any superior to pure water. Dr. Bain criticised the inferences Sir William Roberts and Dr. Luff deduced from their experiments in relation to the supposed superiority of the potassium salts over the sodium salts in retarding the conversion of the hypothetical quadriurate in the blood into the gelatinous or crystalline biurate and stated that one of the most characteristic properties possessed by the blood was its remarkable uniformity of composition, and as it had been shown that the normal alkalinity of the blood could not be altered by the administration of alkalies it would be safer so far as particular alkaline salts were concerned in the treatment of gout to be guided by clinical experience.

Mr. W. H BROWN (Leeds) read notes of a case of Unusual Complications following Gastro-jejunostomy. Dr. T. CHURTON, Mr. H. LITTLEWOOD, Mr. B. G. A. MOYNIHAN, and Mr. R. L. KNAGGS discussed the paper and Mr. BROWN replied.

A number of cases and pathological specimens were shown, among which were the following:—

Dr. WARDROP GRIFFITH: A specimen of Duodenal Ulcer.

Dr. A. F. DIMMOCK (Harrogate): A Calculus weighing 188 grains from a Female Bladder.

Mr. CONSTABLE HAYES: Dermoids of Both Eyes.

Mr. P. J. CAMMIDGE: Carcinoma of the Stomach and Liver.

Mr. R. LAWFORD KNAGGS: Submucous Lipoma of the Small Intestine, found and removed after the reduction of an enteric intussusception, of which it formed the apex.

Dr. CHURTON: A case of Juvenile Tabes Dorsalis.

Mr. SECKER WALKER: An Intra-ocular Growth.

Mr. LITTLEWOOD: (1) A Large Calculus removed from a child aged two years; and (2) Enlarged Bursa Patellæ from a man.

Dr. C. M. CHADWICK and Mr. SECKER WALKER: Specimen of Sarcoma of the Brain, Thyroid Body, and Kidney.

Mr. B. G. A. MOYNIHAN: Cystic Testis (specimen and patient).

Dr. E. F. TREVELYAN: (1) Paraplegia in a child, aged five years, said to have come on after typhoid fever; and (2) a case of Paroxysmal Hæmoglobinuria.

Professor DE B. BIRCH: A Piston Recorder which takes the place of a recording tambour for physiological experiments.

At the annual meeting which was subsequently held the following officers were elected for the ensuing year. President: Dr. Gordon Black. Vice-Presidents: Dr. A. G. Barrs and Dr. W. L. Hunter. Treasurer: Dr. J. E. Eddison. Librarian: Dr. Barrs. Auditor: Dr. C. M. Chadwick. Committee: Dr. H. J. Campbell, Dr. J. Liddell, Dr. J. Allan, Dr. T. Johnstone, Dr. Wardrop Griffith, Mr. Edwin Lee, Dr. F. A. de T. Mouillot, Dr. H. J. Clarke, Mr. B. G. A. Moynihan, Mr. Secker Walker, Mr. C. J. Wright, Dr. F. Robinson, Dr. Gordon Sharp, Dr. S. Long, and Dr. Priestley Leech. Secretaries: Dr. E. F. Trevelyan and Mr. Lawford Knaggs.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

Commercial Pepsin.—Asylum Pathology.—The Medico-Legal Relations of General Paralysis.

A MEETING of this section was held on April 27th, Sir C. A. CAMERON, the President, being in the chair.

The PRESIDENT read a paper on Commercial Pepsin.—Dr. J. W. MOORE said that it was astounding that drugs of such an inferior quality should be sent to the unions in Ireland.—The PRESIDENT here remarked that in many cases the substance under discussion was the only drug which was defective out of 30 or 40.—Dr. NINIAN FALKINER said that the last observation gave the key to the solution of the question. The process of preparation was excluded from the last Pharmacopœia, so that there was no definition of pepsin except that it was a substance that would dissolve a certain amount of coagulated egg albumen. It would have been better to have retained the descriptions of the manufacture of pepsin as found in the two previous Pharmacopœiæ.

Dr. W. R. DAWSON, in introducing the subject of Asylum Pathology, said that the modern conception of insanity as the mental manifestation of physical disorder pointed to the necessity for study of the morbid changes in the brain and nervous system which accompanied mental disease. In many of the English and Scottish asylums there was a resident pathologist who was responsible for the pathological work of the institution, but for the most part he was simply the junior assistant, and was expected to combine with his pathological duties a not inconsiderable amount of clinical and administrative work. This arrangement therefore did not fulfil the conditions requisite to an advance in knowledge, while in the bulk of the asylums it was, for financial reasons, impossible. The only alternative was that which was adopted by the London County Council, when, in 1892, they took steps for the establishment of a central laboratory for the seven asylums under their control. This laboratory they had splendidly equipped and placed under the direction of Dr. F. W. Mott, giving him an adequate salary. This experiment had been a complete success. Not only had most excellent work been done, as shown by the first number of the "Archives of Neurology" which emanated from the laboratory, but, as Dr. Mott stated, his "appointment appeared to have been an incentive to pathological work at other asylums." A special clause had been inserted in the new English Lunacy Bill, authorising the combination of asylums for the purpose of establishing similar laboratories. A number of the Scottish asylums had also united, in 1896, to start a conjoint laboratory in Edinburgh, under the control of Dr. Ford Robertson. This scheme which had now been joined by 17 of the Scottish asylums was from the first a success and numerous papers had been published from the laboratory. The magnificent Pathological Institute of the New York State Hospitals, with its eight departments, each under the charge of a specialist, showed the extent to which this principle of conjoint asylum laboratories had been pushed elsewhere. The annual expenditure of the Scottish

laboratory, which seemed to approximate almost exactly to Irish requirements, was about £600 a year. In Ireland there were 23 district asylums and several other public asylums, such as the Central Criminal Asylum, St Patrick's Hospital, and the Stewart Institution, not to mention a number of private asylums; and if all these, or a good majority of them, were to join the scheme the individual contributions would be comparatively insignificant. The idea was publicly mooted in the address delivered by Dr. Dawson in November, 1899, as President of the Dublin University Biological Association, on which occasion it met with the approval of THE LANCET[1] in its notice of the meeting. Resolutions in favour of the scheme were passed by that association and also by the Irish division of the Medico-Psychological Association of Great Britain and Ireland at its meeting on April 10th.—After some discussion it was proposed by Dr. NINIAN FALKINER and seconded by Dr. F. C. MARTLEY:

That the project of establishing a central laboratory in connexion with the Irish lunatic asylums for the study of the pathology of nervous and mental disease is deserving of the support of the Royal Academy of Medicine in Ireland, and that the General Council be asked to communicate with asylum boards throughout Ireland on the subject.

Mr. CONOLLY NORMAN read a paper on the Medico-Legal Relations of General Paralysis. This disease, forming in itself an epitome of all mental affections, often brought its victims into conflict with the law. But besides the general tendency of all mental disease to cause maladjustment with the social environment, often expressing itself in the form of "crime," there appeared to him to be certain special features in the criminality of the general paralytic which made him of particular interest to the medical jurist. Mr. Norman proceeded to consider the general paralytic's offences under three heads. 1. Violence of a peculiarly brutish and irrational character. 2. Sexual impropriety, depending no doubt in part upon the lack of judgment which is the essential feature of the malady and partly upon the sexual irritability common in its earlier stages. 3. Theft. A number of cases were detailed, exemplifying each form, and some illustrating all. With regard to theft Mr. Norman pointed out that the common notion was quite erroneous—namely, that the thefts of the general paralytic were always *vols à l'étalage* and characterised by silliness and absence of purpose. On the contrary, in certain cases which he mentioned fraudulent acts of considerable subtlety had been the earliest overt symptoms of general paralysis.—Dr. DOYLE said that a tremulous mode of articulation was often observed long before the disease appeared, and he knew of one case in which a noted speaker, the father of a general paralytic, evinced this peculiar tremulous speech.—Dr. DAWSON, Dr. MARTLEY, and the PRESIDENT took part in the discussion.

BOMBAY MEDICAL AND PHYSICAL SOCIETY.

Atropine in Plague.—Diagnosis of Typhoid Fever and Malta Fever.—Pathology of Chronic Inflammation.—Sympathetic Ophthalmia.

THE annual meeting of this society was held in the University Library, Bombay, on Feb. 18th, Dr. T. B. NARIMAN being in the chair.

The following were elected officers for the current year:—Committee: Lieutenant-Colonel W. K. Hatch, I.M.S.; Lieutenant-Colonel H. W. B. Boyd, I.M.S.; Lieutenant-Colonel D. C. Davidson, I.M.S.; Major H. P. Dimmock, I.M.S.; Dr. Edalji Nashirvanji, Dr. T. B. Nariman, Major W. H. Quicke, I.M.S.; Major C. H. L. Meyer, I.M.S. Honorary Secretary: Major H. Herbert, I.M.S.

Dr. R. ROW read a paper on the Action of Atropine in Plague. He said that since his paper on the action of atropine on the plague toxins was read before the society on August 25th, 1899,[2] he had tested the drug in the treatment of 97 cases of plague at Poona in August and September. To these he had to add the 291 cases of Major R. J. Windle, R.A.M.C., and 78 cases treated by Dr. A. Turkhud at Modikhana in November and December. The most prominent feature observed in the treatment was the condition of the bubo, which either subsided completely or remained as a hard nodule, which in some cases when cut into showed a mass of slough with hardly any pus. Dr. Row's own cases gave scarcely 14 per cent. of suppurations, and it was interesting to note that the smaller the dose of atropine administered the more frequently suppurations were found. Some cases not treated with atropine showed 84 per cent. of suppurations. The localisation of the bubo indicated a favourable termination of the disease. In some cases even where six drops of liquor atropinæ sulphatis were given the pupils remained contracted, and these cases as a rule ended badly. Some cases seemed to be scarcely influenced by atropine, and these generally were associated with hæmatemesis, the black vomit of the yellow fever type. However early these cases came under treatment they appeared to be beyond control. Of the 97 patients who were under Dr. Row's care in August and September 53 died and 44 recovered, the recoveries being therefore 45·3 per cent. Of the 53 deaths 15 occurred in from two to 12 hours after admission; eight of these patients were conscious and seven were unconscious; 14 patients died from the second to the fifth day of treatment; all of them rallied and were conscious on the second day of treatment but were carried off during a relapse. Seven died on the sixth and eighth days of treatment from chest complications. Three suffered from black vomit. Three suffered from septicæmia. 17 died in the ordinary course of the disease. Among the 44 recovered patients there were two pregnant women, one in the third and the other in the seventh month, neither of whom miscarried. In Major Windle's 291 cases there were 92 recoveries and 199 deaths, the recoveries being therefore 31·6 per cent. In these cases the mode of administration of the drug was a little different from that of Dr. Row. In Dr. Turkhud's 78 cases the recoveries were 33·4 per cent.; they were treated side by side with an equal number taken in an alternate order, but the latter had no atropine and gave only 18·7 per cent. of recoveries. The total of 466 cases treated with atropine gave an average of 34·6 recoveries. The toxin used by Dr. Row contained no peptone. It was prepared by making an emulsion with sterile normal saline solution and plague bacilli scraped off from the surface of large agar slabs—a process not free from risks to the operator—and this emulsion when tested chemically did not give any albumose reaction.

Major H. HERBERT, I.M.S., exhibited microscopical slides illustrative of some new facts in the Cellular Pathology of Chronic Inflammation.

Major T. E. DYSON, I.M.S., read notes of a case of Sympathetic Ophthalmia. The chief mischief was at the fundus and marked benefit was obtained by mercurialisation produced by the internal use of grey powder and inunction with unguentum hydrargyri.

Captain GEORGE LAMB, I.M.S., read a paper on Serum Sedimentation with special reference to the Diagnosis of Typhoid Fever and Malta Fever. After a historical sketch of the discovery of serum agglutination and its use in the diagnosis of disease he gave a fully detailed account of the method of serum diagnosis employed by Professor Wright of Netley, who makes use of dead bacterial cultures and capillary sedimentation tubes. In this way the whole apparatus of culture media and incubators, as well as the necessity for microscopic observation, are dispensed with. In typhoid fever the blood serum caused sedimentation of Eberth's bacillus typhosus in upwards of 97 per cent. of the cases, whilst in Malta fever the blood serum caused sedimentation of the micrococcus Melitensis. The researches of Major C. Birt, R.A.M.C., and Captain Lamb on the serum diagnosis of Malta fever were published in THE LANCET of Sept. 9th, 1899, p. 701.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 24th, the President, Mr. William Horrocks, being in the chair.—Dr. Rabagliati showed a specimen of a Pyosalpinx (left) and of a Right Ovario-Salpingitis removed by operation.—Dr. J. B. Hall showed the following specimens: (1) Parovarian and Ovarian Cysts from the same patient; (2) a Sarcoma of the Clavicle; (3) a Hernial Sac showing strangulation within the sac; and (4) Sloughing of the Fauces, the result of Tertiary Syphilis.—Mr. T. Wilmot showed a patient, aged 25 years, who was suffering from Acute Gout.—Dr. R. A. R. Lankester showed a patient who had been successfully treated for Pernicious Anæmia.—Dr. James Kerr showed a case of operation for Mastoid Disease with marked improvement in

[1] THE LANCET, Dec. 9th, 1899, p. 1603.
[2] THE LANCET, Nov. 11th, 1899, p. 1301.

hearing.—Dr. Kerr also showed four unusual cases of Sensory Aphasia. 1. Congenital pure word-deafness. The patient was a boy, aged nine years, very intelligent and without discoverable defect except that he could not understand words. He had good hearing but did not speak until taught articulation. He could now read, write, and speak with a rather limited vocabulary, his word memories being apparently entirely visual and motor. There was no history of birth difficulties or of infantile illness or fits. It was thought that the lesion must be bilateral in the cortical auditory centres for speech probably at the posterior part of the superior tempero-spenoidal convolutions. 2. Two congenital cases of word-blindness with agraphia. (*a*) A lad, aged 19 years, who was intelligent in every way except that he could not read a word. Although he could copy literally he wrote gibberish to dictation. Numbers he could write correctly as figures but in words he wrote gibberish; the most complicated arithmetic he would work correctly in figures. There was no history of birth troubles or infantile illness. The lesion probably was slight bilateral affection of both cortical visual centres in the angular gyri. (*b*) A boy, aged 11 years, who had been word-blind and agraphic all his life. He also could copy literally, but mistook letters and could not work arithmetic. He had speech difficulties (dysarthria), correctly attempting words but rendering them so badly that he hardly used speech. He could hear well. The history was of absolutely normal birth and infancy. 3. A case of word-bliindness with hemianopsia. A man, aged 55 years, without albuminuria, after a slight hemiplegic attack was word-blind. On being examined for spectacles he was found to be hemianopic, but the hemianopsia differed from usual cases in that he could see the movement of the smallest point of light in the hemianopic parts of the field, form and colour-sense being quite absent. During the past year he had educated himself to spelling out words, but the fields remained unaltered. He could write correctly to dictation but could not read it, so that the lesion was a sub-cortical one of the left angular gyrus.—Dr. C. F. M. Althorp showed a case of Hydatid Cysts of the Liver treated by operation. The patient was a child, three and a half years old.—Dr. Rabagliati read notes of a case in which he had removed a portion of the lower jaw on account of a cystic swelling associated with necrosis of the bone. The patient was a woman, aged 55 years, who first sought relief on account of caries of the lower jaw in association with a decaying molar tooth. The latter was removed and about nine months later the patient came again complaining of a swelling near the tempero-maxillary joint. This on examination was found to contain fluid and was tapped. The fluid was serous in character and contained cholesterin crystals. There was still a portion of carious bone in the situation of the left lower molar teeth and the bone was enlarged. The cyst was tapped four times subsequently, but was now found to contain sanguineo-serous fluid. The swelling was considered to be sarcomatous and the lower jaw was divided at the symphysis and at the neck of the left ascending ramus, and removed without any external incision. There was very little resulting deformity. A sequestrum about three quarters of an inch long had separated from the ramus, and in addition a considerable portion in the molar region was found to be denuded of periosteum.—Mr. R. Beresford, Dr. T. J. Wood, Dr. Althorp, and Mr. Horrocks discussed the case, and Dr. Rabagliati replied.

NEW YORK ACADEMY OF MEDICINE.—A meeting of the Section on Orthopædic Surgery was held on April 20th.—Among other cases shown were two examples of Hæmarthrosis of the knee.—Dr. Hibbs showed the patients, who were two brothers, aged respectively 11 years and 15 years. There were marked effusion and limitation of motion without reflex muscular spasm in both knees of the older boy and in the left knee of the younger boy. The swelling was marked. The patients were first seen in July, 1899, two weeks after the older had had a hæmorrhage from the lips accompanied by what was evidently an acute hæmorrhagic swelling of both knees. Elastic knee-caps were ordered with immediate comfort and the boys were not seen again until recently. A feature of the history of each patient was that bleeding had occurred from various organs at intervals of one, two, and three months, and that with each recurrence walking was rendered impossible by the tense and painful swelling of the knees. No other joint had been affected. Their father had died from some acute disease and their mother was living and healthy. Two hæmophiliac brothers had died in infancy, but a sister was living and healthy. The synovitis caused by the hæmorrhages had been prevented from resolution by their frequent recurrence. The effect of applying pressure would be observed and recorded.—Dr. C. A. Elsberg recurred to the case reported by him at the meeting of the section held on Oct. 20th, 1899. A boy, aged two years, one of a family in which the male children of healthy mothers had been hæmophiliac, had hæmorrhage into the knee and three or four weeks later similar hæmorrhages in three of the finger-joints. An elastic knee-cap had been applied and the child was fed on gelatin for a while on a theoretical rather than on any other basis. The patient was seen once a month and the blood in the knee was gradually absorbed, leaving the joint in a practically normal condition. He would continue to wear the knee-cap, removing it only at night. There had been repeated hæmorrhages under the skin but no return of bleeding into a joint.—Dr. H. S. Stokes said that hæmophilia was generally transmitted through the mother to her male offspring, the daughters, like their mother, showing no sign of the condition, although their male children were almost certain to be hæmophiliac. The recurrence of swelling of the joint did not necessarily indicate another hæmorrhage. A subacute or chronic synovitis was set up by the extravasation and more or less imperfect absorption. After a hæmorrhage treatment should be prolonged to promote and terminate absorption. The general treatment should receive attention, and rest, immobilisation, pressure, strapping, and counter-irritation should constitute the local treatment.—Dr. Hibbs said that, if done, strapping would have to be continued indefinitely, as the knees in his cases were swollen all the time. The effect of one hæmorrhage did not disappear before the occurrence of another.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on May 3rd, the President, Dr. W. H. Lamb, being in the chair.—Mr. J. D. Malcolm read a paper on the Selection of Cases for Abdominal Section.—In the discussion that followed Mr. Alban Doran said that he considered that the reports of bad cases were far more reliable and more instructive than statistical tables of triumphs in abdominal surgery. Exploratory incisions for what proved to be irremoveable malignant disease were dangerous unless the surgeon trusted to his eyes and kept his fingers as much as possible off the affected structures. When a malignant tumour was removeable, the separation of intestinal and parietal adhesions in itself involved peril, for a raw surface bearing a trace of malignant tissue was often the starting point of general infection. In cases of acute torsion of the ovarian pedicle immediate operation seemed to be the safer course, as Wiltshire and Tait's well-known cases testified. He himself had recently operated where there was bilateral torsion, removing a pair of dermoid cysts. Had he delayed extensive adhesions would have formed, a special source of danger in operating on cysts with greasy contents.—Mr. Butler-Smythe thought that exploratory incisions might be more frequently employed in doubtful cases. So long as the operator confined himself to a small incision little harm would be done to the patient, whilst the diagnosis would be made almost to a certainty. On the other hand, if the surgeon opened the abdomen, broke down adhesions, handled the abdominal and pelvic contents, and in the end failed to remove the cause of trouble, then the patient's life was placed in jeopardy. He (Mr. Butler-Smythe) wished to emphasize the fact that exploratory incisions and exploratory operations were two very different affairs, the former being almost harmless, the latter decidedly serious. He was much interested in the case mentioned by Mr. Malcolm in which a patient who had a malignant ovarian tumour died after simple tapping from heart failure. Three somewhat similar cases were known to him. One occurred in his own practice after removal of a sarcomatous ovarian tumour; the other in the practices of two well-known operators. Curiously enough in all four cases no post-mortem examinations could be obtained, but so far as could be judged by the symptoms noted in each case the fatal termination was undoubtedly due to heart failure, the attacks coming on suddenly when the patients were fairly on the way to convalescence. These cases led Mr. Butler-Smythe to believe that the malignant condition had more to do with such deaths than was imagined. Mr. Malcolm's paper was an example that might well be followed by other surgeons with benefit to their patients and to themselves.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on May 4th, Dr. J. B. Ball, President, being in the chair.—The sub-committee appointed by the society on April 6th, 1900, to consider and report on the necessity of the Notification of Purulent Ophthalmia in Infants, presented a report containing the following recommendations:—

1. Should any midwife having charge of an infant notice that one or both eyes of such infant are inflamed, reddened, or have any discharge therefrom, at any time within two weeks after its birth, it shall be the duty of such midwife so having charge of such infant to report the fact in writing within six hours to the medical officer of health for the parish or municipality, and summon a qualified practitioner of medicine or take the necessary steps to obtain the attendance of the district medical officer. Any failure to comply with these instructions being punishable by a suitable penalty.

2. That the promoters of the Midwives Bill be invited to receive a deputation from the society for the purpose of laying the above resolution before them and explaining the facts by which it can be supported.

The report was unanimously adopted and the members of the sub-committee were requested by the society to form a deputation to lay the above recommendations before the promoters of the Midwives Bill.—Dr. Barry Blacker then read a paper on Treatment by Ultra Violet Rays, and gave a demonstration on the use of Finsen's apparatus for concentrating the rays from an arc lamp on to the diseased area of skin. He also showed a child on whose face a small patch of lupus was under treatment; the skin surrounding the diseased area exhibited in a marked manner the bronzing effect of the rays.—Remarks were made and questions were asked by the President, Mr. George Pernet, and Dr. F. H. Low.—Dr. Blacker replied.—Dr. Leonard Dobson read notes of two cases, in one of which three needles were removed from the breast of a patient suffering from hysteria. The other was a case of impacted fracture of the neck of the femur in a patient, aged 25 years, who was suffering from the result of infantile paralysis of the same leg. Excellent Roentgen ray photographs of both cases were shown by Dr. Dobson to illustrate his paper.—Remarks were made and other similar cases were recounted by Mr. Brindley James, Dr. C. W. Chapman, and Mr. George Pernet.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on May 4th, the President, Mr. A. W. Galloway, being in the chair.—Dr. D. W. Aitken read a paper on the Treatment of Pulmonary Tuberculosis, with special reference to the Open-air Method. His experience of the open-air method was gained under Dr. Brehmer at his farm at Göbersdorf. There drugs were unknown except morphine, which was used in cases of hæmorrhage, and their place was taken by a severe regularity of living during summer and winter in the open air, the encouragement of exercise, the taking of wine and food, careful sanitation, the use of a Leiter's coil to reduce pyrexia, and the moistening of the inhaled air by an automatic spray. From his experience, he said, to talk of the open-air treatment as a method curative in itself was merely to air a fad. Beyond this single hygienic practice much was needed; every peccant detail should be combated energetically and unflaggingly.

LUNATIC ASYLUM FOR CARDIFF.—At a meeting of the Cardiff Asylums Committee held on May 7th it was decided to erect an asylum at Whitchurch to accommodate 1250 patients. It was resolved that provision should at first be made for 800 cases, leaving 450 to be provided for at a later period.

FRENCH HOSPITAL AND DISPENSARY.—The thirty-second annual dinner in aid of the funds of this institution place took on Saturday evening, May 12th, at the Hotel Cecil; the French Ambassador, M. Paul Cambon, was in the chair, and he was supported by the Lord Mayor and sheriffs of London and by many members of the *corps diplomatique*. In proposing the toast of the evening the chairman mentioned that the hospital was on a sound financial basis, although the opening of the convalescent home at Brighton had left a debt amounting to £3000. Sir William Mac Cormac, who was received with great enthusiasm, referred to the excellence of the arrangements for treating the sick and wounded at the seat of war and expressed regret that medical men had not been delegated by the various Governments to study the system, thereby losing an opportunity of acquiring valuable professional and scientific experience. He was cheered to the echo and was acclaimed "a jolly good fellow" by the company to the usual tune.

Reviews and Notices of Books.

The Grammar of Science. By KARL PEARSON, M.A., F.R.S. Second edition. London: Adam and Charles Black. 1900. Pp. xviii.—548. Price 7*s.* 6*d.*

READERS of Mr. Pearson's book will do well to begin with the tenth chapter, in which and the following chapter they will find a very notable contribution to the discussion of the evolution theory. Perhaps the greatest difficulty which the student of living forms has to encounter is the lack of an instrument by means of which he may conduct his researches. Evolution works so slowly that observation without the aid of some instrument to quicken the power of discernment and give accuracy to the observer's readings of his facts is limited to a very few phenomena and seems to be separated by an impassable gulf from the vast bulk of the facts which await investigation. The biologist, in view of the overwhelming mass of subtle changes by which variation does take place in living forms, feels, if he has nothing but his natural history to fall back upon, like a bacteriologist without a microscope or an astronomer without a glass. The materials are to hand in boundless profusion but indefinite and nondescript, irreducible to form and measure, and consequently incapable of being classified and presented in a scientific shape. It is the formidable problem thus brought to light which Mr. Pearson has attacked with equal courage and success. In the two chapters which we have particularised he works out a method of applying a statistical analysis to some of the most abstruse problems of life, and by means of very happily-chosen illustrations he exhibits the power of his new organon with startling success. Thus by an examination very easily conducted, although in principle extremely subtle, of the venation of the leaves of two beech trees he is able to establish individual characters which not only distinguish the two specimens, but admit of precise numerical definition (p. 383), and similarly by the examination of a sufficient number of poppy heads he has succeeded in discriminating by unmistakeable characters the poppies that grow at the foot of the Chiltern Hills from those which grow on their summits (p. 387). Nor are these examples mere chance successes. The method by which they are compassed is of practically unlimited application, and Mr. Pearson has with admirable skill and thoroughness elaborated it in a general form in which it can be applied to materials the most dissimilar. It is clear that by the aid of this most beautiful instrument of research the study of biology will enter upon a new career; it is impossible to predict at what point the new development will find its limits. What is certain is that in this invention or discovery, call it which you will, lies the promise of a great and probably a very rapid extension of our knowledge.

It is not possible in this notice to do more in the way of outlining Mr. Pearson's method than to state that it consists, speaking broadly, in reducing the statistics of any given body of phenomena to a systematic form which he calls an "array." For example, he examines 26 leaves from a give beech tree and finds that they can be arranged in six classes according to the numbers of their veins as follows:—

Number of veins in the leaf ...	15	16	17	18	19	20
Number of leaves in each class	1	4	7	9	4	1

A similar group of leaves from another tree yields the following classification:—

Number of veins in the leaf	13	14	15	16	17
Number of leaves in each class... ...	3	4	9	8	2

Each of these tables exhibits an "array," and each array is, as we understand, typical of the growth of its tree (p. 382). The subtlety of this method of discrimination will at once be obvious.

But it is not in subtlety and descriptive power alone that this method excels, it is also a true analysis and lays bare the essential and recondite physical facts underlying the phenomena with which it deals. Readers who recall their algebra will observe in the above numbers and their arrangement an unmistakeable resemblance to the "functional" forms of certain very familiar binomial expressions, and such as have retained any acquaintance with the higher mathematics will recognise at once that Mr. Pearson's materials are being steered into the route along which the physical sciences have carried their priceless cargoes into port. The author is, perhaps, a little exuberant, but scarcely extravagant, when he suggests (p. 500) that the readers who take the trouble to master these two chapters will "arise from their perusal with the conviction that biology is almost as exact as any branch of physical science."

These two chapters contain what is incomparably the most valuable part of Mr. Pearson's work, but they do not explain the title of the book, which is directed rather to the more speculative doctrine that forms the subject matter of the remaining chapters. In these remaining chapters Mr. Pearson discusses transcendental matters such as Cause and Effect, Space and Time, Matter, the Laws of Motion, and the like. An author of Mr. Pearson's rank ought not to have been led into the unpolished acerbity of the footnote on page 16, which asserts that although the word "metaphysician" cannot be satisfactorily defined it is used in this book to denote "a class of writers of whom well-known examples are Kant in his later uncritical period and the post-Kantians (notably Hegel and Schopenhauer) and their numerous English disciples who explain the universal without having even an elementary knowledge of physical science." We think this part of Mr. Pearson's work is wanting in vigour and discernment. We take his definition of cause by way of example (p. 130). "Whenever," says Mr. Pearson, "a sequence of perceptions D, E, F, G is invariably preceded by the perception C, or the perceptions C, D, E, F, G, always occur in this order, that is, form a routine of experience, C is said to be a cause of D, E, F, and G, which are then described as its effects." And again: "Causation, says John Stuart Mill, is uniform antecedence and this definition is perfectly in accord with the scientific concept" (i.e., with "cause" as scientifically understood). It would be difficult to imagine a definition faultier than this. For in truth mere antecedence in time or the order of perception, which is what Mr. Pearson means—and not antecedence in the order of thought—does not in any sense correspond to the idea of a cause. The radial pulse is observed thousands of times every day in thousands of patients and never was there a radial pulse taken yet but it was immediately preceded in the order of perception by heart sounds. No antecedence could be more uniform, no routine of experience more invariable. Yet who ever imagined that the heart's murmur was the *cause* of the radial pulse? In fact, antecedence in point of time is incompatible with the true and intimate relation of cause and effect between two phenomena. If one precedes another it may be a *causa sine quâ non* but cannot conceivably be a *causa causans*. The reasoner may say to himself, If I see a bicyclist in motion I may observe two concurrent motions—a motion of translation by which the bicyclist and his machine travel bodily over the ground and a motion of rotation by which the wheels turn about their axes without moving away from them, and I know that one of these motions is the cause of the other, but no consideration, however refined, of their order in time will enlighten me as to which is which. If the bicyclist is going up hill I conclude that the motion of rotation is the cause, the motion of translation the effect; if he is coming down I invert the relationship, but in either case I know full well that cause and effect must begin and end together. Antecedence in the routine of experience is here inconceivable.

We have instanced in this specimen what seems to us a fair sample of the bulk of this division of the work. We hope that at some future date the author will give us his analytical theory in a more fully elaborated form and winnowed from the transcendental "grammar" which is linked with it in ill-assorted marriage between the covers of this book.

A Manual of Zoology. By the late T. JEFFERY PARKER, D.Sc., F.R.S., and WILLIAM A. HASWELL, M.A., D.Sc., F.R.S. London: Macmillan and Co. 1899. Pp. 550. Price 10*s.* 6*d.*

SOME time ago we had the pleasure of reviewing the Textbook of Zoology by the authors of this work and many of the remarks which we made on that occasion apply equally to the present. The great diminution of size between the textbook and the manual is obtained not by condensing and epitomising information but by leaving out altogether certain classes of animals, by omitting all descriptions of extinct groups, and by dealing only very briefly with embryology. The result is that the greater part of the space is devoted to the more familiar representatives of the large Phyla of the Animal Kingdom. The arrangement adopted is to take one or more animals of each group as types and to describe them in some detail, accompanying the description with plentiful illustrations and diagrams. Other animals not so common or so characteristic are treated more cursorily or are merely mentioned. To the medical student the book will prove a distinct boon and we think will supply a want, since it contains good descriptions of the types mentioned in the synopses of almost every examining board in Elementary Biology.

There is no intention on the part of the authors that the book should replace laboratory work, but it is undoubtedly an assistance to a teacher that his students should have a reliable handbook in which they can read up their types before dissecting them. There are 300 illustrations and diagrams, most of them reproduced from the authors' textbook; they are of the greatest assistance to anyone reading about an animal which he has not yet examined. If they have a fault it is that of giving the impression that the parts of an animal have a clearness and definition which will often be looked for in vain in the laboratory. The style is perfectly satisfactory; simple terms are used whenever possible, and there is remarkably little small print. At the end of the book is a useful index.

The work seems quite to serve the purposes for which it was intended, and it is likely to become popular among students.

Leçons de Clinique Médicale. (*Lectures on Clinical Medicine.*) Par M. LE Dr. VIRES. Six plates. Montpellier: Coulet et Fils. Paris: Masson et Cie. 1900. Imp. 8vo, pp. 245.

IN a series of 12 clinical lectures Dr. Vires deals with the subjects of Graves's disease, facial paralysis, paralysis agitans, syphilitic myelopathies, myxœdema, and gastric crises. In each instance the lecture is illustrated by clinical cases. Graves's disease is very fully described, including its history and pathology. In one of the author's cases of otherwise typical Graves's disease the enlargement of the thyroid gland was limited to one side. Dr. Vires accepts the thyroid origin of the disease, but adds that we are ignorant of the nature and mechanism of the thyroid lesion. The treatment is very fully given, except perhaps the electrical

treatment. The author would account for the diverse opinions upon the action of thyroid feeding in Graves's disease by recognising two periods in the disease—one of hyper- and the other of hypo-thyroidisation. The various surgical procedures recommended and carried out are mentioned, but nothing is added to the present state of the controversy in respect to the ultimate value of operative treatment. Dr. Vires himself appears to look upon these procedures as of doubtful expediency.

Under peripheral facial paralysis the differential diagnosis between the various forms of facial paralysis is discussed at length. In the lectures on Parkinson's disease the disturbance of equilibration receives a good deal of attention, whereas the paresis so frequently noted is but little emphasised. The few lines given to the treatment are unfortunately, perhaps, strictly in proportion to the little that can be done at any rate for the severer cases. The lectures on syphilitic myelopathies are interesting but the views put forward by the author are somewhat too dogmatic; thus he tells us that syphilis is found in 50 per cent. of affections of the spinal cord even if tabes and congenital syphilis are excluded. The morbid anatomy as given here cannot be said to support that view, for of the six morbid processes referred to only one (gumma formation) can be stated to be definitely syphilitic. Erb's syphilitic spinal paralysis is not looked upon by the author as a distinct morbid entity. The account of myxœdema in Lecture X. is short but interesting. In his excellent description of gastric crises Dr. Vires says that these crises represent a syndroma which occurs not only in various affections of the nervous system but also in lesions of the stomach. This represents rather a wider view of the subject than is usually taken. The book closes with an interesting chapter on Morbid Antagonism by Dr. Salager. Notwithstanding that there may be some ground for differences of opinion in regard to some of the author's views yet these lectures provide some very instructive reading and are written in a fluent and taking style.

A Book of Whales. By F. E. BEDDARD, M.A., F.R.S. With 40 Illustrations. London: John Murray. 1900. Pp. 320. Price 4*s.* 6*d.* net.

THIS book is one of the Progressive Science Series of which Mr. Beddard is editor, and forms a good type of the kind of work which the series is intended to place before the public. In pronouncing judgment it is important to bear in mind that the author's intention was to give in a comparatively small compass a general account of this group of mammals with a selection of the literature which relates to the group, and at the same time to steer a course between too much exposition of technical facts and a too popular account of whales. Technical details there are in some abundance, but they are carefully explained and so contrasted with similar arrangements in other animals that the work never becomes dry or tiresome to a reader who is no specialist on the subject of whales; indeed, it could hardly fail to interest any educated person whether he had made a study of natural science or not.

There are 12 chapters in the book, of which the first five treat of whales in general, while the last seven are devoted to a systematic description of the different forms. Perhaps one of the most interesting chapters in the whole work is that on the hunting of whales, with its quaint quotations from early records of the subject, but all the earlier part of the book is interesting and suggestive. The later chapters will be of less interest to the general reader and at times do not aim at being more than a mere catalogue, but they bring the classification of the orders well up to date and will be of special value to many by the careful way in which the numerous synonyms have been sorted out. The value of the work is increased by the illustrations, many of which are original. We can confidently recommend this book to anyone wanting an up-to-date account of the external appearance of whales, together with an introduction to their internal anatomy and their position in the animal kingdom.

LIBRARY TABLE.

Aids to Pharmacy. By A. CAMPBELL STARK. London: Baillière, Tindall, and Cox. Pp. 170. Price 2*s.* 6*d.*—"Aids to Pharmacy" is one of the "Student's Aids" series and is written as a guide for students presenting themselves for the examination in pharmacy of the Conjoint Board. A syllabus of the examination is bound up with the book. Any student who masters Mr. Stark's information should have no difficulty in satisfying most boards of examiners.

The Experiment of Dr. Nevill. By EMERIC HULME BEAMAN. London: John Long. 1900. Pp. 317. Price 6*s.*—Wilfrid Carsdale receives a severe injury to the brain from an accident in the hunting field. He recovers with complete loss of memory. Dr. Nevill, to bring back the memory, replaces the injured part of Carsdale's brain by a portion taken from the brain of a murderer. Carsdale recovers, not his own memory, but that of the murderer, and, sad to say, not only his memory, but also his tastes, which included burglary, a "housekeeper," and playing the violin. A second operation not only removes these acquired variations but also in some way gives back Carsdale his own proper memory and tastes. The book will do well enough to while away half an hour but bears evidence of being somewhat carelessly written, and the physiological and surgical absurdities spoil it for the medical reader. Mr. Beaman upon two occasions—namely, pages 159 and 279—confuses Frankenstein with his monster, and shows, also, that he has not mastered the principles upon which titled persons are addressed or sign their letters.

Analytical Records
FROM
THE LANCET LABORATORY.

TABLOIDS QUININE HYDROBROMIDE.
(BURROUGHS, WELLCOME AND CO., SNOW-HILL-BUILDINGS, LONDON, E.C.)

THE association of bromine with quinine appears to modify the action of the alkaloid in the one respect that when administered in the form of hydrobromide the distressing effects known as cinchonism are not produced. Doubtless the presence of the bromine radicle serves as a sedative. Tabloids are prepared containing three and five grains respectively of the pure salt. It would be interesting to know the pharmacology of the *naturally occurring* salts of the alkaloids and to note the different effects which these produce in contrast with the administration of the artificially prepared salts, such as the chlorides and sulphates.

VIBIF FLUID BEEF.
(THE GRAPE VINEGAR CO., LIMITED, CROWN BREWERY, PETERBOROUGH-ROAD, FULHAM, LONDON, S.W.)

The proximate analysis of this preparation was as follows: moisture, 37·04 per cent.; mineral salts, 15·81 per cent.; organic solids, 47·15 per cent. The total albuminoid matters, based on the amount of nitrogen and employing the factor 6·25, amounted to 21·68 per cent.; but only two parts of this were precipitated by bromine water, a result which would tend to show that the preparation contains a small proportion of nitrogen substances derived from albumin. It contained some insoluble matter, of which 1·50 per cent. was coagulated albumin, the rest consisting of starch granules. It is stated that Vibif is made "from prime ox beef and the choicest garden-grown vegetables." The preparation has a

pleasant flavour and doubtless possesses nutrient value, but it would be more satisfactory if it contained a richer proportion of soluble proteid. As it is, the nitrogen occurs mostly in the form of extractive principles which, however, exercise a favourable influence on the processes of nutrition.

CLARENCE FRUIT JUICE CRYSTALS.

(SAMUEL ILES, 136, VICTORIA-STREET, BRISTOL.)

We have examined these "crystals" and find that the constituents are without objection. Dissolved in water in suitable proportion they yield a refreshing acid drink. We searched carefully for metallic impurity, and especially lead, but found no evidence of such contamination. The crystals give a yellow opalescent fluid resembling lemon water, having a pronounced flavour and odour of the aromatic oil of lemon.

MERCUROL.

(PARKE, DAVIS, AND CO., 111, QUEEN VICTORIA-STREET, LONDON, E.C.)

Mercurol is a proteid compound of mercury. We found it to be a dull, yellowish, heavy powder, soluble in warm water, which with albuminous substances yielded no coagulum. It is thus a diffusible compound of mercury and by reason of its peculiar constitution it is penetrating. It is, in fact, a nucleide of mercury. The solution readily deposits mercury on copper when warmed with a little hydrochloric acid. On ignition it gives off fumes characteristic of albuminoid substances burning. As a germicide it appears to have been used with success in cases of chronic conjunctivitis and other morbid conditions of the eye. It has been used also in the form of ointment, in which it presents distinct advantages over the ordinary yellow oxide.

CHAMPAGNE CIDER.

(F. BAGGER, 3 AND 4, GREAT WINCHESTER-STREET, LONDON, E.C.)

The results of analysis of this sparkling beverage were as follows: alcohol, by weight 2·83 per cent., by volume 3·55 per cent., equal to proof spirit 6·22 per cent; sugar, 3·80 per cent.; extractives, 7·70 per cent.; mineral matter, 0·23 per cent.; fixed acidity calculated as malic acid, 0·56 per cent.; and volatile acidity calculated as acetic acid, 0·07 per cent. The cider was in good sound condition and free from added preservatives. A noteworthy feature of the analysis is the low alcoholic strength. It is less than that of the lightest lager beer. As may be judged from the above figures the beverage is somewhat sweet but it possesses unmistakeably the peculiarly pleasant flavour and aroma of the fresh and sound apple. Cider in the satisfactory condition of this specimen is a wholesome beverage.

HYRGOLUM.

(BURGOYNE, BURBIDGES AND CO., 12 AND 16, COLEMAN-STREET, LONDON, E.C.)

Hyrgolum is described as a colloidal allotropic form of mercury. On examination we found that it consisted of somewhat heavy black metallic grains, which with water yielded a clay-coloured and apparently dichroic solution. On passing this liquid through a filter paper it still presented a dichroic appearance seemingly turbid but not so in reality. On heating Hyrgolum an abundance of ammonia gas is evolved. The preparation is a very interesting substance owing to its particular property of solubility and being non-caustic and non-irritating it has been suggested as an anti-syphilitic remedy applied in the form of an ointment containing 10 per cent. of the mercuric nucleide. It is said, also, to be without the toxic "by-effects" of ordinary soluble mercurial salts.

SACRETTE SUGAR.

(THE WESTBURN SUGAR REFINERIES, LIMITED, GREENOCK.)

Honey sometimes occurs in a semi-solid condition, and this preparation presents just that appearance. This is an advantage which it possesses over golden syrup, for which it is offered as a substitute. According to our analysis it consists of perfectly pure sugar, of which about one-third is cane sugar and two-thirds inverted sugar. The actual results of analysis were as follows: moisture, 18·33 per cent.; mineral matter, 1·76 per cent.; cane sugar, 22·37 per cent.; inverted sugar, 57·54 per cent. It is an excellent and wholesome article of food, serving in particular as a substitute for golden syrups which are often the subject of adulteration. In Sacrette sugar we could find no objectionable constituent either in the form of "substitutes" or impurity.

LAGRIMA.

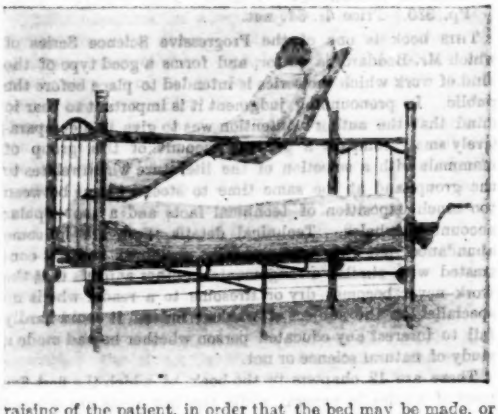
(F. NEWBERY AND SONS, CHARTERHOUSE-SQUARE, E.C.)

The analysis of this wine was as follows: alcohol by weight 13·92 per cent., by volume 17·17 per cent., equal to proof spirit 30·09 per cent.; extractives 19·65 per cent.; sugar, 9·26 per cent.; mineral matter, 0·37 per cent.; acidity reckoned as acetic acid, 0·166 per cent.; fixed acids reckoned as tartaric acid, 0·30 per cent. The wine is intended for sacramental purposes. Broadly it shows a composition resembling that of port wine. It is somewhat sweet to the taste but possesses a good vinous character with a satisfactory taste and aroma. It is free from preservatives. It is, we believe, a pure and unsophisticated wine of Spanish origin.

New Inventions.

INVALID BEDSTEAD WITH LIFTING ARRANGEMENT.

WE have had submitted to us a working model of the "lit asepto-mécanique à transformations" manufactured by the Société Anonyme de St. Jean (Ancienne Maison Billon) of Geneva. The bottom of the bedstead, supporting the mattress, consists of horizontally placed coiled wire springs. Any description of mattress may be used. The special feature of the bedstead is a light frame which rests on the mattress and which can be raised when required by means of metallic cords attached to its four corners and carried over pulleys at the head of each of the four posts of the bed. The



raising of the patient, in order that the bed may be made, or for any other purpose, is effected with the utmost ease by turning the winch handle shown in the illustration. The frame is capable of adjustments which permit the patient to assume either the completely recumbent or the semi-recumbent position. The lower or principal frame of the bedstead is jointed in the middle where the intermediate pair of feet are shown, an arrangement which permits it to be folded into a comparatively small space for transport. A bedstead of this class is undoubtedly well suited for use by helpless and unwieldy patients, especially when the evacuations are not under control. The frame already referred to is crossed by bands of webbing which can be easily detached for cleansing.

THE LANCET.

LONDON: SATURDAY, MAY 19, 1900.

THE approaching meeting of the General Medical Council will be a busy one and may also be protracted. We have been accustomed of late years to long sessions of the Council and unless some changes in procedure or temper take place there is too much reason to fear that they will become longer still. Of all such changes this is the most necessary—to get rid of certain questions which annually and even twice yearly recur for consideration and which apparently so exhaust the Council that they are dismissed by the easy process of adjournment instead of by brave decision. When each session comes it brings its own new questions, but members instead of being free to turn to these with zest find themselves confronted with the old questions which are just as difficult as when they were adjourned, and which have also lost some of their interest from a debating point of view. The Midwives Bill question is not, we may say, a case in point. In every recent session there has been a debate on this subject; and a debate upon it is expected by the profession at the approaching meeting. It may be useless for the Council to re-discuss the matter at large, but it cannot well refuse to consider how far the Bill now before Parliament fulfils the conditions on which its own support to such legislation was given. And it cannot be too firm in making clear to the Government that any tampering with the points which the Council in conclave has considered essential to the right working of the Bill from a medical point of view would render legislation useless as it would leave it without justification. But surely the Council can take up this position as a body without wasting time over debating.

A matter that has been before the Council on and off for several years is the recognition of foreign practitioners by our own laws and the recognition of our own registered practitioners in continental countries. In the year 1892 this question came to the front in consequence of the action of certain foreign countries in imposing restrictions on the right of British practitioners to practise abroad even among their own countrymen. At almost every recent meeting the question has been raised, generally by representations from British registered practitioners practising abroad or by communications from ambassadors of foreign courts addressing our Foreign Secretary, who in his turn seeks advice from the General Medical Council. Hitherto the General Medical Council has temporised. It has sought information from its own lawyers or referred the essential points back to the Foreign Office. There should be little doubt that at its meeting next week the Council will have all the information it can reasonably require for the formation of its own judgment and for the help and guidance of the Government. The Council at its last meeting resolved to seek information from the Privy Council as to the intention of the Italian Government to restrict the action of British practitioners in Italy. This information will doubtless be forthcoming, and it may serve to stimulate the General Medical Council to a final expression of opinion, for the Privy Council has as much to do with this question as the General Medical Council, which it can overrule and even order to recognise foreign diplomas.

The report of a committee of the General Medical Council to consider a letter from the Society of Apothecaries of London on the right of Licentiates of the society to use the titles of physician and surgeon will be looked for with interest, especially as certain distinguished lawyers are at variance with the judges of the Court of Queen's Bench upon the matter. The question can scarcely remain as it is. One way of dealing with it would be for the Royal College of Physicians of London and the Royal College of Surgeons of England to take the Society of Apothecaries into their educational conjunction, but if the Colleges do not see their way to doing this the General Medical Council can bring no pressure to bear upon them. The difference of opinion between the General Medical Council and the English Royal Colleges with regard to the recognition of science teaching in non-medical institutions has not yet been finally disposed of, and it will be well if Sir WILLIAM TURNER can report that since the last session the Colleges are prepared in some degree to accept the Council's views.

The preliminary education of medical students and the way in which it can best be raised will come up again, we suppose, for consideration. This is one of the questions that was the subject of a special report by experts at the last meeting. The Council was so dissatisfied with the inability of the experts to advise any material addition to the stringency of the standard of the preliminary examinations that it passed a resolution asking for more information from the experts in justification of their views. This will probably be afforded, and we may see the ingenuity of the Council exercised in attempting to raise the standard without curtailing the supply of medical students; for we may be sure that the Council will not desire to see fewer medical students, though the mass of the profession thin that many economic problems would be solved by the entry of fewer young men into their overcrowded ranks.

Of other subjects, old and new, requiring the attention of the Council we may mention penal cases; the report of the President in respect of amendments of the penal clauses of the Medical Act; and the financial position of the Council and of its several branches. We fear the Council is in for a long session and we trust that members will not waste its time with idle and irrelevant speeches or with loquacity however well-intentioned, but will get to business directly and will as far as possible finish the subjects which they attack.

A DISPUTE arose last year between the dispensary medical officers in Ireland and the various boards of guardians in reference to their holidays, to which we have frequently had to make reference. Under the thirtieth section of the Local Government (Ireland) Act the Irish Local Government Board made the following rule (Article 28) which they

circulated among the dispensary committees: "That each medical officer shall be allowed an annual vacation not exceeding four weeks, and the guardians shall pay to the medical practitioner employed temporarily to discharge the duties of the medical officer for that period such reasonable remuneration for his services as the Local Government Board shall approve or direct." The wording of this rule led to constant wrangling as to two points—(1) the duration of the holiday, and (2) the amount of remuneration to be paid to the locum-tenent. The medical officers contended that they were entitled to four weeks at least, and were supported in this view by the Irish Local Government Board; while, on the other hand, the guardians said that the rule meant that a period of four weeks was not to be exceeded, but that they who appointed the dispensary medical officers had a right to curtail this period—say by two weeks. As to the remuneration of the locum-tenents, men could not be found in many cases to do the work for less than three guineas per week, which the guardians in most cases declined to pay. The Belfast guardians were willing to allow a month's holiday provided that their medical officers paid their own deputies, but only a fortnight if they—the board of guardians—had to find the remuneration. And other guardians were still less disposed to be generous, while no universal scheme could be put forward as long as the law remained doubtful.

In order to get some decision on a question of considerable importance it was decided to put forward two test cases in the Court of Queen's Bench, and judgment in these cases was given on May 10th and will prove a great disappointment to Irish dispensary medical officers. In the first case Mr. J. L. TORRENS applied on August 9th, 1899, to the Antrim guardians for three weeks' vacation, nominating Dr. M. HENRY as his locum-tenent. On the same day the guardians passed a resolution sanctioning two weeks' holiday and it was stated they informed Dr. HENRY of this on August 11th. This he has contradicted. The Local Government Board, however, approved of Mr. TORRENS having a vacation of three weeks and fixed the remuneration of his locum-tenent at two guineas weekly. Dr. HENRY discharged the duties for three weeks and was paid four guineas by the guardians for the two weeks which they had allowed Mr. TORRENS. Dr. HENRY brought a successful action against the Antrim guardians for the two guineas, but on an appeal before Mr. Justice GIBSON at the Belfast assizes that judge decided to state a case for the superior court. Finally, in giving judgment the Lord Chief Baron PALLES (with whom two other judges agreed) said that although the amount of money in dispute was small an important question was raised as to the rights of guardians of the poor and those of the Irish Local Government Board. The right decision depended largely upon the construction to be given to the rule to which we have referred and which was drawn up by the Local Government Board. The Lord Chief Baron held that the words "that period" clearly referred to the period allowed for the vacation, which was not "four weeks" but "not exceeding four weeks." These latter words, he said, were not sufficient to determine the length of the vacation. It was plain that there must be an act which should define that leave. What, he asked, was the external authority that was to "allow"? Was it the guardians or was it the Local Government Board? It seemed to him that a temporary medical officer during the vacation of the permanent officer must be appointed by the guardians. To obtain his annual vacation the medical officer must submit an application to the guardians specifying the time for which he sought to be allowed a vacation and nominating a substitute; then there must be the consent of the guardians to the application, and by such consent the guardians allowed the vacation and appointed the temporary officer. The guardians, in order to make the rule legal, must have authority to approve or disapprove of the proposal of the medical officer, to determine whether the period for which the vacation was to extend was reasonable under the circumstances, and lastly, whether the nominated medical practitioner was a person whom they desired to appoint. Reading the Article in that way, the Lord Chief Baron gave it as his opinion, and his brethren on the Bench concurred, that Dr. HENRY was not entitled to be paid the two guineas for the third week, and that Mr. TORRENS was not entitled to the third week's vacation. As to the costs, considering that Dr. HENRY had actually performed the duties during the week in question, that he did so under the sanction of the Local Government Board, and as the case, in fact, involved a contest between two public bodies (the guardians and the Local Government Board), the court decided that each party should bear their own costs in that case.

In the second test case—DILWORTH *v.* the Fermoy Guardians—the plaintiff claimed four guineas salary per week for his locum-tenent, and absented himself for a month on the ground that that was the period to which he was entitled as a vacation. The guardians proposed to pay the salary of a locum-tenent at three guineas a week for two weeks only. Plaintiff claimed £30, which the defendants paid into court and counter-claimed for six guineas, being two weeks' salary to Mr. J. ROCHE as locum-tenent for Dr. T. DILWORTH. The Lord Chief Baron made the same rule as in Dr. HENRY'S case and the court entered judgment for the defendants upon their counter-claim for six guineas, each party to pay their own costs. The decision in these test cases must be, as we have said, a great disappointment to the dispensary medical officers, who are among the hardest worked and worst paid medical men in Ireland. And it is a distinct slight to the legal judgment of the Irish Local Government Board, but we doubt whether any attempt will be made to raise the question again. Chief Baron PALLES is by universal consent one of the ablest judges on the Bench, and his *confrères*, Mr. Justice JOHNSON and Mr. Justice BOYD, concurred entirely in his judgments. It was clearly fair, by the way, not to make the losing parties pay their costs, for they were acting upon the interpretation put upon their orders by the Irish Local Government Board, and the real parties to the suit were that Board and the guardians of Antrim and Fermoy respectively.

THE case of ANDERSON and FENNER *v.* MOELLER, upon which we briefly commented last week, is full of interest to medical practitioners, and perhaps the wonder is, disease and human nature being what they are, that such cases do not arise oftener. Disease is often capricious and

insubordinate; the personal equation in it is powerful and very variable. The relation of the medical man to the patient is a delicate one, and mutual trust and forbearance are very generally necessary if the latter is to benefit fully by the ministrations of the former. To do human nature justice this is the common case in medical practice. As a rule, practitioner and patient work together well. They give and take; they treat each other generously and graciously. But when a carping view of medical treatment comes to be taken and there is necessity for the law to vindicate the claims of medicine the practitioner is to be congratulated who finds himself before a judge so capable and discriminating as the Lord Chief Justice of England.

The case of ANDERSON and FENNER v. MOELLER is one in point. Mr. MOELLER, the defendant, was a clerk in a stockbroker's office and in receipt of an income of from £700 to £900 a year. The plaintiffs were two medical men in partnership. On April 5th of last year Mr. MOELLER became ill and applied for advice and treatment to Dr. W. M. A. ANDERSON, in whose absence he saw Mr. ROBERT FENNER, Dr. ANDERSON's partner. Mr. MOELLER then had a temperature of 103° F. and his right ankle-joint was swollen. With his own consent he was sent to 23, Devonshire-street, a nursing home, and there was attended till June by Dr. ANDERSON. Endocarditis was then found to exist, and later phlebitis in the other leg and a clot in the femoral vein complicated the case. The evidence showed that the patient was nervous and hysterical, frequently crying, and at times even "childish," as the Lord Chief Justice said. Much of this may have been due to the nature of the case, but some of it apparently was due to the nature of the patient, making him intolerant of suffering and fearful of the means used to alleviate it, such as soda baths, the hot-air bath, and the occasional administration of anæsthetics. In the course of a month it became necessary to straighten one of the legs, the muscles of which had become contracted. This was done on two occasions, on the first occasion by Dr. ANDERSON and on the second occasion (June 16th) by Mr. FENNER, who had been repeatedly requested by the patient to straighten his limb. On the last occasion the patient became most excited and objected to the use of the anæsthetic unless Dr. (now Sir THOMAS) LAUDER BRUNTON were present. Dr. BRUNTON had seen the patient repeatedly, but could not attend on that day. The anæsthetist, however, testified to the hysterical state of the patient and to his refusal to have the anæsthetic, which, he said, would not have been necessary in the case of a patient of ordinary fortitude. The defendant in his evidence said that on this occasion, after refusing his consent to the employment of anæsthetics, Mr. FENNER seized his leg when the pain was so great that he fainted, but that when he recovered the leg was tightly bandaged and in great pain. The next day Mr. FENNER called and said he would make the leg easier for him. He told Mr. FENNER that he would not see him any more and desired to see Dr. ANDERSON. From that time till June 29th Dr. ANDERSON attended the defendant, who complained of the pressure of the tight bandage. On June 29th Dr. ANDERSON, finding that the patient was prescribing antipyrin for himself, withdrew from the case. Dr. EDWIN HOLLINGS saw the patient thereafter with Sir T. LAUDER BRUNTON. He found phlebitis of the left leg and an ulcer below the right knee which "might have been caused by a splint, considering the condition of the patient." Dr. LEWIS JONES, medical officer in charge of the electrical department of St. Bartholomew's Hospital, saw the patient in April of this year and testified to a scar and indications of wasting of the leg and loss of muscular power in the area of the leg supplied by the peroneal nerve which might last for a considerable time, while Mr. CHRISTOPHER HEATH and Sir THOMAS SMITH spoke to the necessity for straightening the limb.

Medical men will readily understand the trouble which such a case as this might give, the pain in which it would involve such a patient, and how easily the assistance of law might become necessary to vindicate the position of the original medical attendants whose services had been withdrawn. Dr. ANDERSON and Mr. FENNER brought an action to recover £144 18*s.* for medical and surgical attendance on the defendant. The defendant retorted by pleading that the services of the plaintiffs were of no value or benefit to him owing to the plaintiffs' negligence and want of professional skill and counterclaimed for damages for the alleged negligence. The counsel for the defendant, with the freedom allowed to the advocate, abused the plaintiffs, disparaged their diagnosis because in the description of it to friends it did not give bacteriological details, and attributed to their treatment what was mainly due to the hysteria of the patient and the nature of his disease. This line of action on the learned counsel's part was completely unsuccessful. The diagnosis and the treatment were easily demonstrable as being in the main entirely in the lines of sound medical practice. The straightening of the limb was imperatively called for, was desired by the patient, and was justified by authorities such as Mr. HEATH and Sir THOMAS SMITH. The undue tightness of the bandage might easily have been avoided or corrected had the patient been a little more reasonable and amenable to the authority of his medical advisers, who took every means to mitigate his sufferings. And we may be sure that the temporary lameness that followed was a much less evil than the permanent lameness which would have resulted without the measures taken by Dr. ANDERSON and Mr. FENNER. These obvious and essential points of the case were thoroughly grasped by the Lord Chief Justice, who set them forth in a lucid and masterly way to the jury who found for the plaintiffs on the claim for 100 guineas. They also found for the plaintiffs on the counter-claim, adding the rider to their verdict, "We are of opinion that the plaintiffs treated the defendant with all reasonable care and skill and we attach no blame to them whatever."

The one point in which the plaintiffs did not have all their claim conceded was in respect of the amount of their fees. They were allowed 100 guineas instead of £144 18*s.* In the matter of fees the Lord Chief Justice was excellently sound and his remarks should be studied by the medical profession. "There was no law," he said, "to prevent a medical man from charging a fee of any amount that he liked provided that a stipulation was made with the patient beforehand. In this

case, however, no such agreement was made, and therefore the plaintiffs were entitled only to make fair and reasonable charges, taking into consideration both the professional position of the plaintiffs and the position in life of the defendant." The jury reduced the fees to what they considered fair and reasonable upon grounds that we do not appreciate, but the scale of fees charged by the plaintiffs was perhaps a little high. It was, at any rate, higher than that of the general practitioner is as a rule, but they were acting in partnership and in the manner of general practitioners, calling in consultants frequently. We are certain, however, that if the defendant could have shown to his medical men that there were good reasons for his asking to have their charges reduced they would have met him in this respect and saved him heavy legal expenses and public exposure of his frailties.

THE disabilities under which provincial medical officers of health labour by virtue of the somewhat precarious nature of their appointments have recently attracted considerable attention and a Bill is now before Parliament, as we said last week, "backed" by Dr. FARQUHARSON, Sir WALTER FOSTER, and others, purporting to remedy this state of affairs and to place the medical officer of health in a position in which without fear or favour he may be able to perform his duty to the State and receive at least a competence as a pension when his work is done. The subject is one which is naturally of intimate concern to the members of the public health service, but we are agreeably surprised to find that the medical profession generally is evincing a tendency to interest itself in the matter. From a copy of a petition which is to be presented to the President of the Local Government Board by the Hon. A. R. D. ELLIOT, M.P. for Durham City, we gather that 73 medical practitioners are petitioning Mr. CHAPLIN in these terms:—

We, the undersigned medical practitioners, humbly petition the Local Government Board to use its best efforts to obtain security of tenure of office for all medical officers of health throughout the United Kingdom of Great Britain and Ireland. Security of tenure has already been granted to the medical officers of health of London, and your petitioners feel that, without such security, an injustice is often inflicted on the medical officers of health of the provinces, as well as some limitation placed on the usefulness of the Public Health Acts.

We appreciate the spirit which prompted this action on the part of the medical practitioners of Durham, led, we believe, by Dr. E. JEPSON of that city, and we trust that the petition may be favourably considered by Mr. CHAPLIN, with the limitation which we feel bound to indicate. It would perhaps, however, have been better had the petition referred only to such officers as devote their whole time to public health work of one or another kind. This question must eventually be decided by the elect of the people in the House of Commons, and this being the case we have, in order to ensure as great a measure of success as possible, to look at the matter not solely in its professional aspects but also to ask how far such a general proposal as this is likely to prove beneficial to the public health and to the public health service. Moreover, we must have regard to what has a reasonable prospect of passing into law, and petitions in favour of legislation which no Government will ever give are to be deprecated. The ideal which has, to our thinking, to be aimed at, is that of whole-time appointments—i.e., the creation of a public health service the members of which shall be specially qualified to practise that branch of their profession which they have elected. We question whether it is in the interests of this ideal that medical practitioners receiving perhaps the paltry salary of some £10 to £50 yearly shall have their offices converted into permanent appointments; indeed, we see in this proposal a serious obstacle to the development of whole-time appointments carrying salaries commensurate with the dignity of the office of a specially qualified medical officer of health. And further, we have little hesitation in expressing the opinion that a measure such as this would have little chance of success in either Chamber of the Legislature. We speak plainly because we are anxious for reform in the present condition of affairs and are desirous that the prospect of reform shall not be obscured by proposals which we fear will carry with them no little condemnation in the eyes of the local sanitary authorities. To ask these authorities to pay for the services of an officer over whom they will have but limited control and whom they will be unable to dismiss, however incompatible with his surroundings the officer may be, without the consent of the Local Government Board, is a somewhat far-reaching demand, and unless it is proceeded with cautiously defeat may be invited. The promoters of this measure would do well to introduce some differentiation into their scheme—to limit the fixity of tenure, if not to whole-time officers, at least to those who do not engage in private practice, and any future petitioners would be wise to take this line. It is, moreover, perhaps, desirable that before fixity of tenure is ensured to any officer some period of probation, say one to three years, should be stipulated for and that a diploma of public health shall be a *sine quâ non* in all appointments of permanence. Some provisions such as these would, it seems to us, make the measure more acceptable to Parliament.

Annotations.

"Ne quid nimis."

THE LORDS AND THE LICENSING LAWS.

A VERY sharp collision occurred on Tuesday, May 8th, in the House of Lords between the Bishops and the Prime Minister on the subject of the duty of the Government in connexion with the report of the Royal Commission which was appointed by the present Government to inquire into the operation and administration of the laws relating to the sale of intoxicating liquors. The Government only escaped a defeat by a majority of three. The Bishop of Winchester proposed: "That it is desirable that legislative effect be given to such of the recommendations contained in the final report of the Royal Commission on Liquor Licensing Laws as are common to the majority report and the minority report of the Commissioners." This was obviously open to the easy objection of Lord Salisbury that it was a new mode of legislation to accept off-hand the findings of any Royal Commission even when those findings were unanimous. But in opposing it Lord Salisbury abandoned himself to arguments against all interference with the trade "without due

consideration," characterising the legislation proposed as "paternal," as not being demanded, and as being instigated by the "cellared" portion of the community against the "cellarless." His speech led Viscount Peel to say that it was evident that the Government had paid no attention whatever to a question which excited the deepest interest among the earnest-minded people of the country. Lord Kimberley followed in a similar strain. But the blows which fell most heavily on the Premier were those of the Archbishop of Canterbury who only failed by three to carry the following resolution: "That it is desirable that Her Majesty's Government should on an early day lay before Parliament proposals founded on such of the recommendations contained in the final report of the Royal Commission with regard to the liquor licensing laws as are common to both the minority report and the majority report of the Commission." There is no doubt that the attitude of the Government towards this question, expressed with cynical candour by Lord Salisbury, is distressing and discouraging to a very large section of the public and of their own supporters. The submission of politicians to the liquor trade must have gone far indeed if so strong a Government as the present dare not attempt legislation based on the admissions and suggestions of the members of the Royal Commission—who were either neutral or represented the trade—a Commission appointed by the Government itself. Nobody believes that drunkenness will be cured by Acts of Parliament, but the legislature of this country has recognised for centuries that it has duties on this subject of the gravest kind, and when the tension of the present military situation is over it will find ways and means of making this evident to any Ministry that may be in power. We are on the side of the Bishops here and will be no party to the pessimistic and discouraging doctrine that the expenditure of £164,000,000 a year on drink calls for no attention and no seriousness at the hands of the Government. The wards of our hospitals and post-mortem rooms save us from such views.

THE RISK TO OUR SEASIDE RESORTS FROM JETTISONING DISEASED CATTLE.

THE practice of throwing the carcasses of diseased cattle into the sea within a few miles of the foreshore is obviously open to the severest possible condemnation. Yet it would appear that such is the case, for it is stated that recently the entrails of cattle have drifted ashore in large quantities at certain of our seaside resorts on the East coast. The possibilities of risk to public health and to the health of domestic animals under these circumstances are great. In answer to a question on this subject put in the House of Commons on Monday last Mr. Long confessed that he was unable to say in the case of a steamer arriving with a cargo of diseased cattle from Argentina at what particular stage the carcasses were thrown overboard or whether or not any breach of the law had taken place, but inquiries were pending. We trust that the provisions of our laws against such a source of contamination are carried out satisfactorily. Surely the master of a ship should not be allowed to discharge a cargo or part of a cargo of diseased animals into the sea within comparatively easy distance of the shore. If the carcasses are brought near shore they should be landed and dealt with by the only rational method of disposal of such a contaminated cargo—viz., heat. It is well known that apparatus is constructed which will efficiently deal with offal, bad or indifferent, by means of superheated steam. Not only in this way are all pathogenic organisms destroyed, but an actual gain is made by the yield of fat as well as other products which can be converted into excellent fertilising material for the soil. We trust that our port sanitary authorities will keep a sharp look-out upon the indiscriminate disposal of diseased cattle at sea, and that any such cargo will be treated by the sanitary and profitable method which we have indicated.

THE DANGER FROM SMALL-POX.

THAT the danger from small-pox has still to be reckoned with is strikingly shown in the report of a case which reaches us from Bolton, where a man named Beech is now an inmate of the Infectious Diseases Hospital. In company with another man who was supposed to be suffering from influenza Beech travelled from Russia—where small-pox has been prevalent—*viâ* Queenborough, St. Pancras, and Manchester; and in the railway carriage from London were four other persons. At Stalybridge, the patient's destination, he was found to be suffering from small-pox of such a malignant type that he died there next morning. The man Beech was afterwards found to be suffering from small-pox and was taken into the Bolton Infectious Diseases Hospital, but thanks to the promptitude and energy of the measures taken by Dr. J. E. Gould, medical officer of health there have been no other cases reported in the borough. But it has been ascertained that all the people who travelled in the same railway carriage to Manchester with Beech and the deceased are now suffering from the disease.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

THE Pharmaceutical Society of Great Britain held their annual dinner at the Hôtel Métropole on May 15th, the chair being taken by Mr. G. W. T. Newsholme, Vice-President. Sir Howard Vincent, M.P., in replying to the toast of "The Imperial Forces," referred to the extreme interest taken by Lord Roberts in the medical arrangements for his forces. Dr. W. S. Church (President of the Royal College of Physicians of London) in responding to the toast of "The Medical Profession," said that there was no section in the profession of medicine which was not greatly indebted to the Pharmaceutical Society for the good which that society had done during the last generation. He had heard with pleasure of the action of the Council of the Pharmaceutical Society during the last few days. Certain questions had been placed before them by the Government in the same way that they had been placed before the Royal Colleges with regard to the standardisation of sera. He could not say what might be the answer of the Royal Colleges, because the questions had not yet been considered by them, but he had read with satisfaction the answer that society had returned to the Home Office. He saw no probability of there being any difficulty in regard to the standardisation of sera and there was no reason why a solution of that question should not be made in a way which would form a reasonable and workable arrangement between the Government and the medical profession. In regard to the Pharmacopœia he felt sure that the scheme now settled on between the General Medical Council, which might be looked upon as representing the medical profession, and the Council of the Pharmaceutical Society would give satisfaction to both bodies and would also lead to the good of the whole community. Mr. T. Bailey Saunders (secretary of the London University Commission), in proposing the toast of "The Pharmaceutical Society," said that he had been told that in the course of the present year that society was to introduce a new scheme for their preliminary arts examination, and that would help them to weed out incompetent men and would save candidates who were not designed by nature to be pharmaceutical chemists from wasting their time. That movement meant that the Pharmaceutical Society was fully alive to the danger of the too exclusive pursuit of one special subject. He was happy to be able to announce that amongst the recognised teachers of the University of London there would be three

professors in the School of Pharmacy—namely, Dr. J. N. Collie, F.R.S., Dr. J. R. Green, F.R.S., and Professor H. G. Greenish. Sir J. Crichton Browne, in returning thanks for the guests, regretted the prevalence of enteric fever, pneumonia, and dysentery in South Africa. He said that enteric fever was now increasing out of all proportion to deaths from wounds. Every death from enteric fever represented four cases of that disease. No doubt it was endemic in South Africa, but he suggested that an inquiry by eminent sanitary authorities who might suggest precaution, and would at any rate collect information, would be useful on future occasions. The idea abroad that medical treatment was of no avail in enteric fever was mere folly; they might have no specific, but there was no disease in which skilled medical treatment could do more to ward off death and to alleviate suffering. In the course of the evening reference was made as to whether a limited liability company should not be considered to be a "person" under the Pharmacy Act of 1868, and Mr. Remnant, M.P., promised to give the matter his best attention if it came before the House of Commons.

FLORENCE NIGHTINGALE.

ON Saturday, May 12th, on the occasion of her eightieth birthday, Miss Nightingale was presented with a basket of beautiful flowers and a handsome album, containing the names of over 650 nurses, past and present, who received their training in her schools at St. Thomas's Hospital and at St. Marylebone Infirmary, and the following illuminated address:—

DEAR MISS NIGHTINGALE,—We, as your nurses, speaking for ourselves and many others who have been trained in your schools and are proud to bear the name of our dear chief, trust that you will allow us to offer you our hearty congratulations on this your eightieth birthday.

We rejoice that you are still able to see some of us from time to time, and to take a lively personal interest in our work.

We feel grateful to you, not only for the benefits which you have conferred upon us individually, but also for having by your example and wise direction created a noble calling for women generally.

We beg that you will accept this book, containing our names, and a basket of flowers as our birthday offering.

Names were received from nurses in Australia, various parts of India, South and West Africa, Egypt, Palestine, Algiers, North and South America, Russia, Finland, Denmark, and other continental countries, besides Great Britain and Ireland.

A FALSE ALARM OF PLAGUE IN SMYRNA.

LETTERS written from Constantinople state that on May 8th the Conseil Supérieur de Santé of that city received a telegram from Dr. Mizzi, Médecin Sanitaire at Smyrna, reporting that a case suspected to be one of plague had occurred in the practice of Dr. Amado of Smyrna. The patient was a Jew, 60 years of age, a dealer in brushes and very poor. Dr. Amado first saw him on May 5th when his symptoms included headache, high fever, and slight bronchial catarrh. On the 6th he was found to have in his right groin a hard painful bubo of the size of an egg. On the 7th he was seen by Dr. Mizzi, five members of the Health Commission, and Dr. Leoni (médecin Conak). The patient, who had never been out of Smyrna, was then slightly delirious, with high fever, and had rose spots like those of enteric fever all over his body. There was no bubo other than the one already mentioned. A definite diagnosis was not made, but the man was isolated outside the city and all sanitary precautions were taken. The director of the Pasteur Institute at Constantinople was immediately sent to Smyrna to make an investigation. It was announced on May 8th that passengers from Smyrna to Constantinople would be medically examined, firstly on board ship at Smyrna, then in the Dardanelles, and finally on their arrival at Constantinople. Reuter's agent telegraphed from Constantinople on May 13th that it had been established by a bacteriological investigation that there had been no death from plague at Smyrna, and that the sanitary precautions enforced in Constantinople against arrivals from that city would probably be relaxed.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Mr. John H. Morgan, one of the senior surgeons at Charing-cross Hospital, at the election to be held in July, will be a candidate for one of the vacant seats on the Council of the Royal College of Surgeons of England. Charing-cross Hospital has not been represented on the Council since Mr. Hancock's election in 1863. Mr. J. Bland-Sutton of Middlesex Hospital will also be a candidate for a seat on the Council. It is understood that Sir Thomas Smith will not seek re-election.

THE DIAGNOSIS AND TREATMENT OF PNEUMOTHORAX WITH A VALVULAR PERFORATION OF THE PLEURA.

AT the meeting of the Société Médicale des Hôpitaux of Paris held on April 6th Dr. A. Béclère read a very important paper on the Diagnosis and Treatment of Pneumothorax with a Valvular Perforation of the Pleura. M. Bouveret has pointed out that cough is necessary in order that air might accumulate in the pleura at pressure greater than that of the atmosphere. Only during the efforts of coughing, when the intra-bronchial pressure is greater than that of the atmosphere, can air be introduced into a pleural cavity to a point beyond the atmospheric pressure. As the intrapleural pressure increases so do the dyspnœa and the signs of pressure on the adjacent viscera, such as depression of the liver when the pneumothorax is on the right side and displacement of the heart to the right when it is on the left side. The most important and the earliest sign of pneumothorax with a valvular opening is the presence of intrapleural pressure greater than that of the atmosphere. Dr. Béclère has invented a very simple instrument which enables the intrapleural pressure to be measured, and a valvular pneumothorax to be diagnosed with certainty and at the earliest period, and also to be treated in the best way. It consists of a hollow needle, such as is used for hypodermic injections, which is connected by an indiarubber tube with a glass tube about six inches long and one-fifth of an inch in bore. The glass tube is half plunged into a vessel containing water. The instrument having been sterilised and the usual antiseptic precautions having been taken, the needle is inserted (preferably obliquely) in an intercostal space. If the intrapleural pressure exceeds the atmospheric pressure gas will pass through the apparatus and escape through the water in bubbles, until the intrapleural pressure becomes equal to the atmospheric pressure. By this instrument also the patency of pleural perforation in a case of a pneumothorax may be ascertained. When the patient coughs gas will be driven through the apparatus and the water in the tube will be depressed below the level of that in the vessel. If, when he has finished coughing the column rises again to the level of the water in the vessel the air driven out of the pleural cavity must have been replaced and the perforation must be patent. If, on the contrary, the level in the tube rises above that in the vessel the air has not been replaced and the perforation is closed. Dr. Béclère claims that this "capillary puncture" of the pleura is the best treatment of valvular pneumothorax, as the use of the ordinary trocar is more likely to lead to generalised subcutaneous emphysema. If

the air re-accumulates in the pleura the puncture can be repeated several times in the same day if necessary. If the patient's cough persists Dr. Béclère suggests that the needle might exceptionally be kept in position for part of the day. It should then be surrounded with sterilised wool and the patient should be kept under constant supervision.

THE CHEMISTRY OF THE NEW HALFPENNY POSTAGE-STAMP.

IN THE LANCET of May 5th (p. 1299) we had occasion to publish the results of a chemical examination of the new halfpenny postage-stamp, and we then said that from the *point of view of the chemistry of the new stamp* there was no reason to suppose that it contained injurious substances and therefore licking would be harmless. We found, in fact, that the green colouring consisted of a mixture of Prussian blue and chrome, and that objectionable mineral colourings were absent. This analytical note was largely quoted by the Press, but in many instances the construction put upon our conclusions was misleading and indeed dangerous. One paper wrote, for instance, that "it is a comfort to know that the new halfpenny stamp may be licked without fear of the consequences." Articles appeared in other papers under such headings as follows: "A Stamp that may be Licked," "May be Licked with Impunity," "Stamps that can be Swallowed," and so on. These headings and comment are a distinct, and, we think, dangerous, misrepresentation of what we said. We pointed out as clearly as language could possibly indicate that from the point of view of chemistry the new stamp was harmless but that this fact did not warrant the nasty habit of licking postage-stamps, because instances were known in which without doubt the gum must have been infected with pathogenic organisms. Instances of blood-poisoning set up in this manner have been established.

FIRST INTERNATIONAL CONGRESS OF MEDICAL ETHICS OR DEONTOLOGY.

THE Committee of the International Congress of Medical Ethics and Medical Deontology, which will be held in Paris from July 23rd to 28th, have again sent out circulars to announce to the medical profession that a reduction of 50 per cent. on the rates of French railways and of 30 per cent. on the rates of the Transatlantic Company's steamers will be allowed to all members of the Congress who have sent in their subscriptions before June 20th, 1900. The documents necessary to obtain this reduction will be drawn up at the same time as the cards of admission to the Congress. The railway ticket will be available for one month, from July 20th to August 20th. With regard to housing in Paris the committee have made special terms with various agencies. Some of the agencies have rendered similar services to the members of previous scientific congresses. Detailed memoranda dealing with the proposals made by these agencies are now in the hands of the presidents and secretaries of the Committees of Patronage and of the foreign National Committees, to whom members of Congress desirous of obtaining further information are requested to apply. Those who intend to join the Congress should send in their subscriptions—members 15 francs, associates 10 francs—accompanied by their cards, or the application forms detached from the circular of invitation, to the Treasurer of the Congress, M. Pierre Masson, 120, Boulevard St. Germain, Paris. Associates (medical students and wives of members) are eligible for the reduced railway rates. They will, however, have no right to the publications of the Congress nor can they take part in the discussions. Several of the foreign railway companies have also shown a disposition to grant reductions similar to those accorded by the French railway authorities. This should increase the number of members attending from distant countries.

END OF THE DISPUTE BETWEEN THE STOCKPORT AND DISTRICT MEDICAL SOCIETY AND THE LOCAL BRANCH OF THE ST. JOHN AMBULANCE ASSOCIATION.

THE differences between the Stockport and District Medical Society and Mr. A. E. Ferns, the late honorary secretary of the Stockport Centre of the St. John Ambulance Association, have now been arranged. Mr. Ferns has addressed to the chairman of the local centre a letter in which he stated that as he (Mr. Ferns) knew it was the wish of the president (Earl Egerton) that he should continue to be connected with the centre and "acting in what he conceived to be the spirit of the award, he was prepared in any part he might take in ambulance matters in the future to work amicably with all concerned in promoting the best interests of the Order," &c. This letter was considered at a recent meeting of the Stockport and District Medical Society, and in a spirit of conciliation it was resolved that, provided Mr. Ferns inserted the words "the members of the medical profession in Stockport and" before the words "all concerned," the medical society would not oppose his re-election. Mr. Ferns inserted these words and at a subsequent meeting of the Stockport Centre Mr. Arthur Briggs was elected secretary and Mr. Ferns was appointed chairman. We congratulate the members of the Stockport and District Medical Society on the course of action which has put an end to this unhappy dispute, and at the same time we feel sure that their forbearance and magnanimity will be appreciated and reciprocated by Mr. Ferns, who, it cannot be denied, in the discharge of his duties as secretary gave not a little cause of offence to various medical men in the town. However, that is happily a thing of the past, and we do not doubt that in the future Mr. Ferns and his medical colleagues will work together with that spirit of harmony which should always distinguish those engaged in rendering service to their fellow creatures.

THE SANITATION OF DUBLIN.

CLOSE at the back of Fitzwilliam-place there is a noisome den where a child died from tuberculosis during Her Majesty's gracious visit to her Irish capital. Seven other children were allowed to keep up a wake for three days round the corpse which was already in a state of decomposition. One of the children, a twin baby, was in a dying condition. The surrounding insalubrious state of the dwellings equalled some of the worst descriptions of the foulness prevailing at Dublin given by our Special Commissioner, and yet Fitzwilliam-place stands socially on the same level as Upper Brook-street in London. It is a very fashionable and one of the most elaborately decorated quarters of the town. There are laws in Ireland which sanction the application of the much-needed sanitary measures, but where are the administrators who have the capacity and the desire to apply these laws? Sanitary administration should of course be independent of all political and theological controversy. That this is not the case in Dublin is the cause of a negligence which has cost thousands of lives. Fifteen years ago a Royal Commission was held at Dublin on the Housing of the Poor and yet to this day, as we have fully shown,[1] the town remains a disgrace to modern civilisation. The death-rate continues to be appallingly high, for the

[1] THE LANCET, Dec. 23rd (p. 1778) and 30th (p. 1859), 1899, and Jan. 20th (p. 199) and 27th (p. 268), 1900.

average for the first quarter of the present year is 39·6 per 1000, that of London during the same period being only 23·4, and that of Edinburgh 23·8.

MR. VICTOR HORSLEY ON THE MEDICAL ACTS.

OUR attention has been called to the fact that at the conference on Medical Organisation held at Manchester on May 1st, Mr. Victor Horsley stated in his address on "The Medical Acts" that Mr. E. W. Alabone had been struck off the Register for infamous conduct and that this statement is incorrect. Technically it is incorrect. Mr. Alabone's name and qualification were erased from the Register on Nov. 16th, 1886, because his name had been removed from the list of Members of the Royal College of Surgeons of England.

THE MIDWIVES BILL AND THE BRITISH MEDICAL ASSOCIATION.

THE interest of the medical profession in the progress through Parliament of the Midwives Bill will not be destroyed by the fact that the Bill has been passed unaltered by the Grand Committee on Law. It was in consequence of the failure of efforts to secure certain amendments during this stage of events that a deputation from the British Medical Association waited upon the then Solicitor-General on May 3rd. The speeches of the deputation and the remarks which they drew from Sir Robert Finlay are reported at length in the *British Medical Journal* of May 12th and it will be seen that the alterations suggested in the Bill were in the main such as would be desired by those of our readers who admit the necessity for some legislation. As to the defects of Mr. Egerton's Bill, in the opinion of those who allow that some legislative regulation of midwives is bound to come, they are chiefly related to the question of efficient control of the midwives by the medical profession, and particularly to the question of the adequacy of the Central Midwives Board, as constituted by the Bill, to ensure such control. That the control secured by the Bill left much to be desired was the point urged on behalf of the British Medical Association by Dr. S. Woodcock, who advocated making the board representative of different districts in the country. An allied point also urged by Dr. Woodcock is the question of local supervision. Undoubtedly, as he suggested, the medical profession should be represented in the body that exercises local supervision. We agree also with the contention that the failure of a midwife to summon medical aid in cases of difficulty or of disease of, or danger to, the mother or the child should be regarded as misconduct within the meaning of the Bill. As it stands at present the Bill merely states that the "certificate shall not confer upon any woman any right or title ..... to assume any name, title, or designation implying that she is qualified ..... to attend cases of abnormal labour or of disease or danger to the mother or the child." This is, of course, a very different thing from stating that by so attending she is guilty of misconduct. The point is inherently not an easy one to settle because of the different opinions as to what constitutes danger. Many thick and thin opponents of the Bill would doubtless declare every midwifery case one of danger, and as this is true potentially who is to contradict them? Dr. T. A. Helme, who formed one of the deputation to the Solicitor-General, stated his opinion that though natural labour could not be defined positively it could very well be defined negatively, and held that the Midwives Board could frame regulations which should exclude the attendance of licensed midwives on non-natural cases. The Bill, of course, makes safety in this matter to depend upon the degree to which competency and intelligence are ensured by the examination to which midwives will be subjected before receiving their certificates from the Board. But the midwife who relies upon having passed an examination may err either through confidence or diffidence. It has been generally assumed that she will be ready on all occasions to act as though she were a fully qualified medical practitioner. Still, if one may judge from the behaviour of medical students when they are learning midwifery, the danger is not only that midwives will fail to seek medical aid when in the presence of a case of difficulty. They may, on the other hand, be constantly sending for medical men when they have to do with what is really a case of natural labour. Dr. Helme drew attention, also, to a defect in the Bill's definition of "midwife" by which it did not require her to give attendance after labour. She would thus, he thought, be able to disclaim responsibility for fever when the patient had been relegated by her to other hands, the origin of the fever having been very probably her own person. This is a matter that clearly requires attention. Mr. Horsley raised the question of applicants for admission to the Midwives Roll producing evidence not of efficiency only but also of character, and objected to the recognition of the certificates of the Obstetrical Society of London as that body is "merely a private society and not recognised by the medical profession as a proper body to be given statutory authority." The Obstetrical Society's statutory authority will be of limited duration. However, there is a strong feeling in the profession in favour of Mr. Horsley's view. Another point which Mr. Horsley described as very critical was this, that no Board would care to assume authority not specifically laid down in the statute, and that the Bill provided no statutory prohibition of the midwife continuing to take charge of a case after she had recognised that a difficulty or danger had arisen. The Solicitor-General promised that the full consideration of the Government should be given to the amendments considered desirable by the deputation.

THE RELIEF OF THIRST.

A CORRESPONDENT writes to us upon a matter which undoubtedly comes home to the heart of every one of us. He says that—

> Everyone is constantly hearing of the terrible thirst which our soldiers in South Africa have to endure and we who have friends there are receiving requests for "thirst-quenching tablets" or anything which will afford relief. Many of us would be only too grateful to know of something which could be sent out, as also for any hints as to methods of quenching thirst, even temporarily, in the absence of unpolluted water. Such information would reach great numbers of men—it would lead to the saving of much suffering and probably of not a few lives.

Whilst fully sympathising with the writer of this letter in his desire to be informed of some means by which the terrible thirst experienced by our soldiers in action or lying wounded on the field of battle can be relieved, we fear that such means are not to be looked for in thirst-quenching tablets, or in fact in any other means than the supply of water. Thirst is the expression or cry of the system for water. It is a want that is felt in all other parts of the body—in the blood which becomes thicker, in the skin which becomes hot and dry, in the nervous system as is indicated by headache and delirium, in the muscular system which is enfeebled, and in the glandular organs as shown in the costive bowels and high-coloured and dense urine. The want of water is referred especially to the fauces as thirst, and is perhaps really felt in that region more acutely than elsewhere because, in addition to the want of action of the salivary glands, the whole mucous membrane of the mouth is rendered very dry by the passage of air over it through the open mouth and by the great interference that such dryness causes in speech and in swallowing. But what relief can be

expected from tablets? Tablets themselves require moisture to dissolve them, and to enable them to act. Lemon-juice might possibly prove of service, but how is that to be obtained in the exigencies of war? Even if a few moments' relief were afforded by such means the imperative desire for water would not be abolished and would probably only be intensified. We must regretfully admit that we know of no means but water to relieve the feeling of thirst that proceeds from violent exertion under a tropical sun, either with or without the additional misery of those bodily injuries which so materially increase its intensity.

INOCULATION OF TYPHUS FEVER.

A RUSSIAN physician, Dr. Mochutkovski, has inoculated himself with the blood of a typhus patient with the result that after feeling no ill-effects for 17 days he had a severe rigor on the 18th day with fever, delirium, and a comatose condition lasting for a fortnight. The rash appeared on the fifteenth day of the disease and desquamation began 11 days later, he being convalescent on the 23rd day after the initial rigor. This interesting experiment appears to prove that the virus in typhus fever resides in the blood. It should, however, be mentioned that Dr. Mochutkovski had previously attempted to inoculate himself with the blood of typhus fever patients no less than seven times unsuccessfully.

EXPERIMENTAL REPRODUCTION OF DENTAL CARIES.

M. J. CHOQUET has recently made some experiments on the propagation of dental caries by direct inoculation of healthy teeth with the carious microbe and the results of his observations were read before the Academy of Sciences in Paris at the meeting held on April 2nd. That dental caries is due to a micro-organism has been established by the labours of several investigators, but its reproduction by direct experiment has not as yet been demonstrated. From three stopped teeth, the stopping of which had remained intact for periods varying from three to seven years, he succeeded in isolating five species of microbes. Of one of these he was able to obtain pure cultures. The characters it presents are that it is short, motile, ramifying when growing in extract of meat, and incapable of liquefying gelatin. It does not grow on or in gelose, potato, or serum. On gelatin-peptone it forms colonies only on the fifth or sixth day. These are oval in form, opaque, and whitish in colour. The growth is greatly favoured by the addition of 1 per cent. of glycero-phosphate of lime. It is a facultative anaerobe with disposition to develop more rapidly in vacuo. It causes glycerine, mannite, glucose, galactose, saccharose, lactose, maltose, dextrine, and inulin to ferment. It is without action on dulcite, erythrite, arabinose, and the nitrates. It does not peptonise albumin nor does it coagulate milk. It does not liquefy starch paste, neither does it form indol with peptone. M. Choquet having obtained a pure culture of the microbe made a small cavity on the labial side of the incisor of a sheep, not so deep, however, as to penetrate the pulp cavity. A small platinum cup, sterilised by fire and charged with the culture, was introduced into the cavity so that the culture was in contact with the dentine and the hole in the tooth was plugged. Nine months afterwards the tooth was examined. The bottom of the cavity was of yellowish colour, due to the dentine being softened by the action of the microbe. Cultures made from the carious portion of the tooth gave a bacillus of the same form as that which had been used in the experiment. The same results were obtained in two other cases.

A NEW medical organisation has been formed under the name of the New York Genito-Urinary Society. The membership will be confined to specialists, and clinical cases will be reported and papers read at meetings to be held monthly. The office-bearers are: President, Dr. Ramon Guiteras, professor of genito-urinary diseases in the New York Post-Graduate School and Hospital; first Vice-President, Dr. Winfield Ayres of Bellevue Hospital; second Vice-President, Dr. Otis K. Newell, formerly of the Harvard Medical School, now of New York; Treasurer, Dr. George W. Blanchard; Secretary, Dr. A. D. Mable; Corresponding Secretary and Stenographer, Mr. Samuel Bennett, 161, Garfield-place, Brooklyn, U.S.A.

DR. Frank G. Clemow has been appointed, in succession to the late Dr. E. D. Dickson, as British delegate to the Ottoman Board of Health and physician to H.M. Embassy, Constantinople.

THE annual conversazione of the Medical Society of London will be held on Monday, May 21st, at the rooms of the society, 11, Chandos-street, Cavendish-square, W. The President will hold a reception at 8.30 P.M., and at 8.45 P.M. the oration will be delivered by Dr. J. Kingston Fowler, the subject being Science and Medicine in the Eighteenth Century.

AT the meeting of the Royal Medical and Chirurgical Society to be held on May 22nd, Mr. Clinton T. Dent and Sir William Mac Cormac will deliver addresses on the Wounded in the Present War. The addresses will be illustrated by lantern slides and an exhibition of specimens showing the effects of various forms of bullets.

A REUTER'S telegram in the *Times* of May 14th states that the number of cases of plague in Sydney up to May 13th was 216 with 73 deaths. It will be seen by comparing these figures with those given on p. 1470 by our correspondent that there has been a spread of infection during the past month.

THE opening lecture of the summer session at the Hospital for Consumption and Diseases of the Chest, Brompton, will be delivered by Dr. C. Theodore Williams on Wednesday, May 23rd, at 4 P.M. The subject of the lecture is the Relation of Pleurisy to Pulmonary Tuberculosis.

A TELEGRAM from the Governor of Mauritius (Sir Charles Bruce) to Mr. Chamberlain, received at the Colonial Office on May 11th, states that no fresh cases of bubonic plague have occurred, and no deaths from plague have been reported for the week ending May 10th.

THE Council of King's College, London, have appointed Dr. F. W. Tunnicliffe to the chair of materia medica and pharmacology in succession to Dr. N. I. C. Tirard, who was lately appointed Professor of Medicine.

IT is announced that Her Majesty, by the advice of her Privy Council, has nominated Mr. William Henry Power, M.R.C.S.Eng., F.R.S., to be for five years a member of the General Medical Council.

AMONG the candidates selected on May 10th by the Council of the Royal Society for election as Fellows were Mr. Patrick Manson, M.D. Aberd., C.M.G., and Mr. Leonard Hill, M.B. Lond.

AT a meeting of the North Holland (Lincolnshire) County Council held at Boston on May 16th Dr. Arthur Tuxford was elected coroner for the North Holland Division.

THE WAR IN SOUTH AFRICA.

WHEN writing last week we said that the advance of the British troops had begun in earnest and that what was understood to be very much the original plan of the campaign was being prosecuted with great vigour and celerity; that the overwhelming strength of the British forces advancing rapidly in a concerted movement as a big encircling wave was inevitably having the effect of driving the Boer forces from all their positions towards those at which they had determined on making a defensive stand; and we added that it was quite within the range of possibility that the fighting power of the Boer forces might suddenly and unexpectedly exhibit signs of collapse. The rapid progress of events since then has certainly been in that direction, for the Boers have abandoned position after position with little or no fighting—cleverly drawing off their forces, however, with their guns, munitions of war, and food-stuffs, so as for the most part to elude their capture, on the one hand, and avoid the risk of any general engagement on the other. Whether they have a motive, which they are sedulously concealing, in withdrawing from their positions towards some point where they intend to make their final stand and in the hope of lengthening and weakening our lines of communication or not remains to be seen; but their tactics have all the appearance of being the result of rapidly failing strength to maintain the struggle, of loss of confidence in the success of their cause, and probably also of internal dissensions and demoralisation among themselves.

Sir Redvers Buller, after having given his army a long rest, has made an important and successful movement, the result of which has been that the Boers were completely outflanked and practically the whole of their strong defences in the Biggarsberg taken. The Boers, when they come to realise the effect of General Buller's movement, will most probably fall back. This will be followed by a further advance on the part of the British, while a part of General Buller's force will still hold and safeguard for a time the passes of the Drakensberg. So that it comes to this, that whichever way we look the campaign is being carried on with a speed and success that seem eminently satisfactory. The march of General Buller's force was rendered trying owing to the fact that their foe had fired all the grass on the top of the Berg during their retreat and the blinding smoke was carried by the wind in the faces of the British troops. Lord Dundonald's cavalry made a fine and successful march in pursuit of the retreating Boers. Sir Redvers Buller has since captured and occupied Dundee and Glencoe—an important matter. Such is the military situation at the present time. Mafeking is the great blot in the picture and public anxiety is focussed upon its fate. We wonder whether the Government fully realises the feeling that exists in this country in regard to that little garrison? Should it unhappily fall by assault or have to yield from starvation and disease the Government will, politically speaking, sustain a great blow, and even Lord Roberts's popularity will be prejudicially affected. But we refuse to believe that the relief of Mafeking will fail to be accomplished.

We have read with interest the account of an interview between the special correspondent of the *Standard* and General Türr at Vienna on Saturday last. What the general had to say about the publication of the Spion Kop despatches and about General Buller's services struck us as eminently just. General Buller, he declared, had been most valuable in Natal, keeping the Boers from overriding the south of the colony and from destroying the railway down to Durban and that at a time when everything depended upon it. Speaking of the war the general said:—

"Such a war never was waged before, since equal distances have never had to be traversed, nor have such difficulties of ground, climate, and supply ever had to be surmounted." And he added: "The South African war is a school for the soldiers of the whole world and the best armies (including the most scientifically trained) will derive a lesson from it. I as a soldier follow it, map in hand, day by day with burning interest, and so every officer in Europe is likely to do, or at least ought to do, because the South African war is the starting-point for new tactics, a new strategy, new equipment, new formations—in fact, it revolutionises all our ideas about warfare and the proper preparation both for defence and offence."

Among the changes which the war in South Africa will bring about will be the re-organising and unification of the various medical services at the disposal of this country and the creation of some kind of national army medical service with a big medical reserve, the reduction and simplification of all clerical work on field service, and the greater division and specialisation of medical duties by the selection and appropriation of medical officers to particular kinds of duty.

We were glad to notice that Sir William Mac Cormac received quite an ovation on the occasion of the thirty-second annual dinner of the French Hospital. M. Paul Cambon, the French ambassador, was the chairman and was particularly happy and tactful in his allusions to this country and France and in his remarks about the services of the medical profession. Sir William Mac Cormac in his speech referred in grateful terms to his pleasant sojourn in Paris as a medical student and his labours with the French army in 1870. Of his recent experience he said that never before had the sick and wounded been treated with such assiduity and skill. His only regret was the absence of medical men from other countries, who had thereby lost a valuable professional and scientific experience.

Although there is, unhappily, a great deal of enteric fever among the troops in South Africa, as well as dysentery (which is, however, mostly of the catarrhal type and easily curable by rest, appropriate diet, and sulphate of magnesia), the army is healthy and the troops are in high fettle, excellent form, and undaunted, as far as their enthusiasm and courage are concerned. There is what may be termed "an enteric fever age," and soldiers are mostly at that time of life, but it is fresh arrival in a hot climate, and not youthful age, that is the great factor in predisposing to attacks of this fever. The hospital service is working well and the military and civil elements coöperate together in their labours and vie with one another in the common object which they have in hand. We notice, by the way, that some mischievous correspondence of a controversial character has been occupying the columns of a daily journal in regard to the Herbert Hospital. The statements are of a curiously contradictory character. The truth or otherwise of the adverse allegations, which are of an anonymous kind, relate to matters of fact and can be either verified or disproved. Knowing how easy it is to argue from the particular to the general, and how frequently statements are made which cannot be substantiated or are susceptible of satisfactory explanation, we must say that we are usually inclined to discredit such complaints. The honest and straightforward course in all such cases, and that most in the interest of everybody, it seems to us, is to report the circumstances at once to the local hospital authorities with a view to their being investigated and dealt with promptly and on the spot. It is time enough to write to the papers when this has been done and failed.

(FROM OUR SPECIAL CORRESPONDENT AT THE BASE.)

Notwithstanding the lull in active operations at the front the number of sick coming down shows very little diminution—in fact, I hold it as an axiom that the more Mr. Atkins and his officers are employed the less time they have to think of their bodily ailments. Not that the class of cases which come down can all be catalogued as "repairable," but still, there are undoubtedly a few patients who, given active employment and some chance of excitement, would have almost forgotten that they had any aches or pains.

There are about 70 sick officers at present in the wards of No. 1 General Hospital at Wynberg and about a dozen at No. 3 General Hospital, some of whom are likely to be able to go up again shortly, but others will have to be invalided. The transports have been taking a fair complement home every week and the hospital ships are generally pretty well filled. There is a rumour that No. 3 General Hospital is to be sent up the country next week, and as our hospitals on arrival have been sent up there ought to be no dearth of accommodation on the lines of communication. We have already had a foretaste of the winter rains here and the impossibility of treating cases under canvas is very apparent.

The telegram announcing that Major W. Babtie, R.A.M.C., had been awarded the Victoria Cross has given general satisfaction, as from all accounts he richly deserved it.

I am sorry to say that there are no signs of decrease in the number of cases of enteric fever, several fatal cases being added to the list every week. This scourge is almost as

formidable and its results as fatal as the epidemics of cholera which we used to meet with in our early days in India. I am afraid we shall have to search for something more reliable in its effect than inoculation. One fact has struck me during this campaign and that is that I have seen more cases of enteric fever in patients aged over 30 years than I have come across during the whole of my service in India, a period of over 12 years. I cannot account for this except from the fact that in the cases of patients over the age of 30 years this has been their first experience of foreign service. I presume that they have been more susceptible to the disease in the altered conditions of their life out here than men of their own age who, to use an African expression, have been "salted." Still the fact remains that a great number of these cases have occurred amongst the civilians employed with the army who are abroad for the first time. From all accounts a new feature in wounds will be introduced in the next big engagements as the Boers are manufacturing bayonets on a large scale, but whether they possess the *vis a tergo* remains to be seen. Up to the present I have only seen two cases of punctured wounds caused by the bayonet, both of which were accidental. I am speaking of course of our own men, but it would be interesting to have an account from the Boer side of the result of some of our hand-to-hand engagements and the nature of the wounds which have been inflicted.

The epidemic of enteric fever at Simons Town is, I am glad to say, being gradually overcome, and the efforts of the medical staff are at length making themselves evident. It has been a hard fight, and great credit is due to the unceasing precautions and watchfulness of those engaged in combating the outbreak. Every comfort has been provided for the Boer patients and they have been treated on exactly similar lines to our own sick.

The numbers of sick and wounded at present in the base hospitals are about as follows:—No. 1 General Hospital, 71 officers and 524 non-commissioned officers and men, including Boers; No. 2 General Hospital, 530 non-commissioned officers and men; and No. 3 General Hospital, 12 officers and 500 non-commissioned officers and men. I hear that there are still a large number of sick up country who will gradually be brought down. About 25 officers and a number of men go home to-day (April 25th) in the *Kildonan Castle*.

There are no Boer prisoners left at Simons Town now except those in hospital, they having all been moved either to Green Point or to St. Helena, but from all accounts their places will be shortly filled by another batch from the front.

I was much struck the other day whilst witnessing the disembarkation of a Militia regiment at the docks by the physique, or rather the want of physique, exhibited by some of the young officers and a considerable number of the men, and comments on their appearance amongst the stalwart Colonials were the reverse of complimentary. It seems a pity that it should be thought necessary to send out officers and men to this country who would not be passed by an officer of the Royal Army Medical Corps in examining drafts for India.

Claremont, Cape Colony, April 25th.

THE QUEEN'S SECOND VISIT TO THE ROYAL VICTORIA HOSPITAL, NETLEY.

SINCE THE COMMENCEMENT OF THE WAR IN SOUTH AFRICA.

WEDNESDAY, MAY 16TH, 1900.

HER MAJESTY'S determination to do all in her power to encourage her soldiers and express her personal sympathy with those who have unfortunately been invalided from the front owing to wounds or disease, was again manifested on Wednesday last, when for the second time since the commencement of the present war she undertook the not inconsiderable journey from Windsor to cheer the sufferers in the Royal Victoria Hospital at Netley. How much these visits are looked forward to and appreciated by those in hospital, how gratifying such signal marks of her womanly sympathy are to the whole army, is known throughout the length and breadth of her dominions. The second visit on Wednesday was paid under even brighter auspices than the first, for the past few days have witnessed the accomplishment of Lord Roberts's wonderful march to the borders of the Transvaal, the re-occupation of Dundee and Glencoe, and the retreat of the demoralised Boers before Sir Redvers Buller's advancing troops. It is now felt that events are so shaping their course that the end of a terrible struggle is within measurable distance.

The Queen's visit was of special interest as it is the first time that Her Majesty has not had to send her horses and carriages from Windsor and to be driven to the great military hospital from Netley station. The Royal train ran through the old station over the new line of railway which has lately been finished and which connects the hospital with Southampton and Portsmouth, passing the long array of huts in which many of the convalescent men are accommodated. It is interesting to recall that as far back as the year 1875 the Queen made inquiries as to the methods of transporting the sick and wounded to the hospital and herself suggested that the line of railway might be continued to the precincts of the institution. After the Omdurman campaign, when Her Majesty came to see the wounded sons of her kingdom, she again spoke on this subject and it was then determined that the matter should be taken in hand. The new line was constructed by Captain C. R. Stevens, R.E., who was only just allowed time to complete his work before being ordered out to India to take over an important post in that country. The new three-quarters of a mile of permanent way must be regarded as a lasting tribute to Her Majesty's thoughtful foresight. Trains are now run from the steamers' sides to the new platform in the rear of the hospital and from thence a covered way leads into the corridor of the central block of the great building.

Leaving Windsor shortly before 2 o'clock the Queen's train travelled over the South-Western line and arrived at the new hospital station at 3 52 P.M. Here to meet her were assembled Lieutenant-General Sir Baker Russell, K.C.B., K.C.M.G., commanding the Southern District, and his Staff, Colonel the Hon. J. Napier, Colonel Scott, Commanding Royal Engineer, and Captain Thresher, A.D.C., of the Rifle Brigade; Colonel W. J. Charlton, R.A.M.C., the Principal Medical Officer at Netley; and Colonel Creagh, the Assistant-Adjutant-General. The railway station was elaborately decorated with flags and flowering shrubs by the Assistant-Adjutant-General's staff and the men from the coastguard station. On alighting from the railway-carriage the Queen entered her wheeled chair and to the strains of the National Anthem played by the band of the 4th Battalion of the Oxfordshire Light Infantry—which regiment furnished the guard of honour, consisting of three officers and 100 men, who was drawn up in an open space near the platform—she passed down the covered way under flags and festoons, one of which bore the words "A hearty welcome," into the corridor of the hospital. On the railway platform the Queen's senior equerry presented Colonel W. J. Charlton, R.A.M.C., and Mrs. Charlton, from whose hands Her Majesty was pleased to accept a magnificent bouquet of red and white roses tied with green ribbons. Colonel Charlton then presented Miss Helen Norman, R.R.C., lady superintendent of nurses, and the following officers, to Her Majesty: Lieutenant-Colonel W. E. Webb, R.A.M.C., the officer in charge of the medical division of the hospital; Lieutenant-Colonel G. A. Hughes, R.A.M.C., D.S.O., secretary to the Principal Medical Officer; Major W. Dick, R.A.M.C., the acting professor of surgery in the Army Medical School; Major C. Birt, R.A.M.C., in charge of the surgical division of the hospital; Major M. Kelly, R.A.M.C., assistant secretary to the Principal Medical Officer; Major W. B. Leishman, R.A.M.C., assistant professor of pathology in the Army Medical School; Captain and Quartermaster Johnson, and Captain and Quartermaster Lackay.

After these presentations Her Majesty proceeded towards the lift through the covered way and corridor. At the lift were assembled the officers of the staff not on duty and the wives and families of the officers. Accompanied by H.R.H. Princess Beatrice, by Prince and Princess of Battenberg, and by Her Highness Princess Victoria of Schleswig-Holstein, and attended by Lady Southampton, Lady Churchill, and Lady Baker Russell, the Queen ascended in the lift to the surgical division of the hospital, where she visited seven wards attended by Colonel Charlton, R.A.M.C., and where Major Dick and Major Birt explained the nature of many of the men's injuries. Her Majesty

spoke kindly words to all the men in the wards and with her own gracious hands distributed bunches of choice flowers which she had brought with her from the Royal gardens at Frogmore. Her Majesty specially noticed Sergeant Bosley of the Royal Field Artillery, whose left arm and leg were blown away by a shell at Ladysmith. The Queen inquired specially for the men of the colonial troops and the 13 men of these forces who are at present in hospital were brought to her notice. One of the wounded men made a petition to the Queen saying that he had not received his box of the Queen's chocolate and Her Majesty was gracious enough to promise that a box should be sent to him. The Queen asked the number of men in hospital who had lost limbs in South Africa and ordered that a list of all those requiring artificial limbs should be sent her on the morrow. In the surgical division Major Ottley, of the Yorkshire Regiment, who has had his leg amputated as the result of a wound received at Ladysmith, was presented to the Queen, and to him she addressed a few words. After the tour of the surgical wards the Queen descended in the lift to the medical division of the hospital, where Colonel W. E. Webb, R.A.M.C., explained the nature of the cases. There also the Queen visited seven wards. She remarked on the nature of the service pillows supplied for hospital use and said that pillows of a more comfortable kind should be supplied for the sufferers. Soon after her arrival the Queen expressed her satisfaction at the new station and passage for reaching the hospital, and spoke of the excellence of the decorations; she also announced the occupation of Glencoe by the army under Sir Redvers Buller. At the time of the Queen's visit there were 846 men under treatment in hospital. Never in this great base hospital has a longer roll of serious cases been brought to the notice of the Queen. Since the invaliding commenced from South Africa no less than 3426 men have been admitted and have received treatment in the wards of the hospital, and thence have been drafted away—many to go to their homes restored to health and strength, and not a few fit and ready for their return to the front, others, again, to convalescent homes so freely provided by generous sympathisers; but in the hospital there are left behind a growing accumulation of those who are grievously injured, many of whom will be incurable sufferers, and by these men especially—sons of her mighty empire—the visit of the venerable Queen-Empress will ever be remembered and cherished as an act of thoughtful affection. The Royal train left Netley at 5.30 P.M. on its return journey to Windsor.

LORD CROMER'S ANNUAL REPORT ON EGYPT.

ALTHOUGH at the present time the southern portion of Africa naturally claims the lion's share of attention the affairs of the principality which occupies the north-eastern corner of the whilom "dark" continent can never be wholly devoid of interest to the British public, and the man in the street—to use the phrase of the day—would be seriously disappointed if the repertory of Egyptian information which he has grown accustomed to expect each spring with undeviating punctuality were from any cause not to be forthcoming.

In his tenth consecutive annual report on the finances, administration, and condition of Egypt Lord Cromer is, happily, able to chronicle a continuance of the wonderful fiscal prosperity which ever since 1887, when first the annually recurring budgetary deficit was replaced by a surplus, has rewarded the untiring efforts of the British administrators. During the four years 1883–86 the aggregate excess of expenditure over income came to £E 2,761,000, whereas the aggregate surplus of the following thirteen years has amounted to £E 6,809,000, or considerably more than half a million per annum. That the financial system which has been imposed upon Egypt by the force of circumstances could not well be more complicated or intricate is well known, but, thanks to Lord Cromer's lucid exposition, it becomes intelligible. Owing to what his lordship with happy euphemism calls the "anomalies" of that system the comparatively enormous sum of £E.7,088,000 has accumulated in the hands of the Debt Commissioners, where it remains locked up out of the reach of the Egyptian Government. The fault, however, as Lord Cromer is careful to observe, does not lie with the Commissioners, either individually or collectively, but with the International regulations by which they are bound. So far from proving themselves obstructive the gentlemen in question have done what they could to minimise the injurious effects of an obsolete ordinance and out of the above-mentioned accumulation have agreed to devote no less than £E.2,182,000 towards various projects of public utility. This no doubt shows an admirable spirit, but the Egyptian Government could accomplish the apportioning of its own funds at least equally as well, and the time, as Lord Cromer suggests, has certainly now come to put an end to an expensive system of control for which there is no longer the slightest necessity.

When the estimates for 1899 were framed the revenue was cautiously appraised at £E.10,600,000, but the actual receipts came to £E.11,415,000, or £E.815,000 more than was hoped for. The expenditure also exceeded expectations, but instead of a modest surplus of £E 40,000, as was foreseen, the actual amount in hand is £E4.02,000 and that notwithstanding the payment during the year of £E 422,000 on account of the Soudan deficit.

But apart from finance, upon which reform of every description is more or less dependent, there is much in Lord Cromer's report for 1899 which possesses special interest for medical readers. Writing under the head of "Medical Administration" the Consul-General says:

> During the past year Sir John Rogers, who for some years past has rendered eminent services to the Egyptian Government as Director-General of the Medical and Sanitary Department, resigned his position. An able successor has been found in the person of Mr. Pinching. In the course of the year 22,894 cases were treated in the Government hospitals, as against 21,676 cases in 1898. About 357,000 successful vaccinations were made during the year ending Nov. 1st, 1899, as against 346,900 during the corresponding period in 1897-98. The Vaccine Institute supplies calf lymph regularly to 53 of the principal towns in Egypt, besides sending special consignments to any locality where an outbreak of small-pox may occur. A new hospital has been completed at Chibin-el-Kom. That at Assiout will shortly be ready for occupation. The Hygienic Institute under Dr. Bitter rendered excellent service during the past year. Bacteriological examinations were made in cases of suspected plague. I am informed that researches are in course of progress on the relation of certain species of mosquitoes to malaria, a subject which has lately attracted a good deal of public attention.

Under a number of sub-headings, such as Prisons, Cairo Lunatic Asylum, the Water-supply of Provincial Towns, Rabies, the Cattle Plague, Municipalities, &c., Lord Cromer's remarks indicate, on the whole, a fair amount of progress, but the larger question of Sanitation is dismissed in a few lines:—

> No step of any special importance in the direction of improved sanitation has been taken since my last annual report, but some further progress has been made in the work ..... of improving the sanitary condition of the mosques and removing old burial-grounds.

The scheme for the drainage of Cairo, so long in abeyance, is not even mentioned; but with regard to the project for Alexandria it is satisfactory to learn that "designs and estimates for a portion of the work have been prepared," and that "there is, therefore, every prospect that before long the construction will commence." With reference to the Cairo School of Medicine we are told that in consequence of Dr. Cooper Perry's recommendations a great change for the better has taken place throughout the establishment. Lord Cromer adds that he "was recently informed on very high independent authority that save on one point the system of instruction now in force at the school left nothing to be desired," the exception being "the important branch of anatomy." 18 students, of whom two were Germans, joined the school last October.

The manner in which the outbreak of plague at Alexandria was dealt with is set forth at some length in an appendix, but Lord Cromer's observations may be quoted *in extenso*.

> I annex a very interesting memorandum prepared by Mr. Pinching descriptive of the recent outbreak of plague at Alexandria and of the measures which were taken to prevent the spread of the epidemic. The manner in which this difficult question was treated reflects the greatest credit on the authorities of the Sanitary Department. So far as can at present be judged they have been successful in stamping out the disease. Moreover, in spite of the notorious difficulties to be encountered in carrying out a series of measures, which are in most cases irksome and in some cases singularly apt to excite opposition amongst Orientals, the whole of the operations were conducted with such judgment that no serious complaints were made by any class of society, whether European or native.

The final third of the report is devoted to the Soudan, but for the present space to notice it adequately is lacking. In summing up his remarks relating to Egypt proper Lord

Cromer is able to place on record that "the past year was marked by features of a specially favourable nature." In the first place the Dervish power, so long a dead weight, was removed. Secondly, "the skill and energy of the officials of the Sanitary Department averted the danger from plague"; while in the third place—and Lord Cromer "dwells on this point with special pleasure"—never before were the relations between the Egyptian authorities and the English officials so thoroughly cordial in every respect. The only jarring note is due to the Nile, which "has failed beyond all precedent," but thanks to the precautions of the Irrigation Department there is happily no reason to dread anything worse than "temporary inconvenience."

THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

IT is officially announced that the tenth International Congress of Hygiene and Demography will be held in Paris this year from August 10th to 17th under the presidency of Dr. Brouardel, Dean of the Faculty of Medicine of Paris. The subjects which will be discussed at the Congress are classified as follows:—I—Hygiene: (1) Microbiology and Parasitology as applied to Hygiene; (2) Alimentary Hygiene, Chemical and Veterinary Science, as bearing upon Hygiene; (3) Public Health, Engineering and Architecture as bearing upon Hygiene; (4) Individual and General Hygiene, Infancy, Physical Exercise, Schools, Hospitals, Prisons, Cremation; (5) Industrial and Professional Hygiene, Unhealthy Dwellings; (6) Military, Naval, and Colonial Hygiene; (7) General and International Hygiene, the Prophylaxis of Infectious Diseases, Sanitary Legislation and Administration; (8) the Hygiene of Transport, Railways, Ships, Omnibuses, Tramways, Motor Cars. II.—Demography. The price of a member's ticket is 20*s*. Programmes and forms of application for membership can be obtained from the Secretary of the British Committee, Dr. Paul F. Moline, 42, Walton-street, Chelsea, S.W. Special arrangements for travelling will, it is hoped, be made. Further particulars will be announced shortly.

(FROM OUR SPECIAL CORRESPONDENT.)

If the British members of the forthcoming International Congress of Hygiene and Demography are not fully prepared to take part in this important gathering it will not be for want of timely warning. Just a year ago on May 13th, 1899, they could have read in THE LANCET a lengthy description of the Congress, the sections into which it will be divided, and many of the subjects that would be discussed. It only remains now to add some supplementary details. As already stated on several occasions the Congress will commence on August 10th and conclude on the 17th, thus following immediately after the Congress of Medical Ethics, the Congress of the Medical Press, and the General Medical Congress. The entrance fee has been raised from 20 francs, which was charged at all the previous congresses, to 25 francs, or £1, and members should now forward their fees to the general secretary, Dr. A. J. Martin, 21, rue de l'Ecole de Médecine, Paris, giving their names, addresses, and qualifications. The Congress is open to medical men, chemists, engineers, architects, public administrators, municipal councillors, and in a word to all who are especially concerned in matters relating to the preservation of public health and sanitation generally. The families of members, wives, or daughters, or other near relatives, who are not thus qualified, may attend the meetings of the Congress and participate in the receptions and excursions on the payment of an entrance fee of 10 francs or 8*s*., but they cannot take part in the discussions or votes. The same rules apply to the division of Demography which deals with vital statistics. In the first account published last May it was stated that the division of Hygiene comprised seven sections. This has now been altered and there will be eight sections as follows:—(1) Microbiology and Parasitology as applied to Hygiene; (2) the Hygiene of Food, including the Chemical and Veterinary Sciences in their relations to Hygiene; (3) Sanitation—i.e., Engineering and Architecture as applied to Hygiene; (4) the Hygiene of the Individual and of Collectivities, Schools, Physical Exercise, Hospitals, Prisons, &c., and Cremation; (5) Industrial and Professional Hygiene, also Unwholesome Dwellings; (6) Military, Naval, and Colonial Hygiene; (7) General and International Hygiene, Prophylaxis of Transmittable Diseases, Sanitary Legislation, &c.; and (8) the Hygiene of the Means of Transit—Railways, Ships, Omnibuses, Tramways, Motor-cars, &c. The second division, which is devoted to Demography, is not divided into sections.

The Executive Committee is particularly desirous that the discussions should not be left to the hazard of the moment but that the members should have time to prepare what they propose to say, or at least to refer to facts and evidence bearing on the points at issue. Therefore a number of carefully prepared reports will be published beforehand and forwarded as soon as they are printed to those members who have paid their subscriptions. This does not preclude the introduction of other questions; but as the members will be able to read a considerable number of the opening papers before the Congress meets, it is hoped that some appropriate and carefully prepared criticisms will be forthcoming and that these may be more instructive than remarks made on the spur of the moment. Up to a month previous to the holding of the Congress other subjects may be suggested. The authors of such papers should send the titles and the summaries or conclusions to the general secretary, Dr. A. J. Martin. The Executive Committee reserves to itself the right of judging whether such papers can find a suitable place within the limits of the programme of the Congress. There will be two general meetings of the entire Congress, for the opening and closing ceremonies. Sunday, August 12th, and Wednesday, August 15th, will be devoted to special excursions. Speeches may be delivered in any language, and efforts will be made to provide interpreters. The resolutions carried in the sections will be submitted to the final and general assembly of the Congress. This is what was done with somewhat unsatisfactory results at the Budapest Congress. The final and general meeting of a congress as a rule is but a formal and complimentary affair. The time is taken up with congratulatory speeches from the representatives of the various nationalities. A discussion on a scientific problem is altogether out of question and out of place. All that can be done is to read the resolutions carried in the sections, and they are accepted or rejected by members nine-tenths of whom never heard the discussions which led to their adoption in the sections. This is not fair to the sections or to the movers of the resolutions. In the earlier congresses, especially those that were held in Paris, matters were better managed. A resolution carried in a section did not go any further than the section, but the sections only met in the mornings. Every afternoon there was a general assembly of the entire Congress to discuss subjects of more general, if less specific, interest, on which all the members were more or less competent to vote. When a resolution, after due discussion, was carried by the entire Congress its importance could not be denied, and such resolutions had considerable weight with various legislatures. It was hoped that the French Executive Committee would revert to this system which was originated in Paris in 1878. At this, the Second Congress of Hygiene, the sections met in various localities in the morning and the entire Congress assembled in the afternoon in the great hall of the Trocadéro. The debates which then took place were most remarkable and impressive and the adoption of a resolution meant the approbation of several hundred hygienists. Perhaps on the present occasion it is felt that there will be too many members to render general discussions possible; and, indeed, the fact that it is no longer so many hundred, but so many thousand, members who attend these congresses, makes it very difficult to organise such general assemblies.

The programme of seven sections and the Division of Demography as published in THE LANCET of May 13th last year has scarcely been altered, and therefore it is only necessary to add that of the eighth and more recently created section. It might be called the Travellers' Section. M. Cuvinot is President and M. Chevallereau is secretary. The report deals with:—firstly, the prevention of transmission of diseases by railway travellers or railway servants; what measures should be taken at the moment of departure, during the journey, and on arrival; and how the sick and the carriages in which they are found

are to be isolated, and the carriages cleaned and disinfected; secondly, the minimum standard of acuteness of eyesight admissible for service on railways or at sea; thirdly, the internal arrangements of ships from the sanitary point of view; fourthly, the cleansing and disinfection of ships and the goods which they contain; fifthly, the ventilation, warming, and lighting of vehicles used for transport, such as railway carriages, omnibuses, &c.; sixthly, the hygiene of the traveller by motor-car; and seventhly, the sanitation of hotel rooms.

All the principal countries have formed national committees to organise a proper representation at the Congress. Professor W. H. Corfield, 19, Savile-row, London, W., is the general secretary for the British section. There is every reason to believe that a very large number of Germans will attend this Congress. The Austrians have three committees—Austrian, Hungarian, and Czech. There are committees formed in Norway, Sweden, Denmark, Holland, Belgium, Germany, Bulgaria, Roumania, Italy, the United States, Mexico, and Japan. In China a committee is being formed. There is no news as yet from Turkey, nor do the Spaniards seem to be particularly active, though the last International Congress of Hygiene met at Madrid. As there are so many congresses being held this year it is probable that there will not be so large an attendance at any one of the congresses as on previous occasions. Nevertheless, there are many and special attractions and therefore preparations are being made for the reception of numerous guests.

Paris, May 13th.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on May 10th, SIR WILLIAM MAC CORMAC, Bart., K.C.V.O., the President, being in the chair.

Surgeon-General W. R. HOOPER and Mr. FREDERICK PAGE were introduced and after signing the by-laws and making the required declaration were admitted Fellows of the College.

Dr. HARRY LAMBERT LACK, F.R.C.S., was introduced and the PRESIDENT handed him the Jacksonian Prize, together with a document declaratory of the award.

Mr. JOHN HOWARD MUMMERY was introduced and the PRESIDENT handed him the John Tomes Prize, together with a document declaratory of the award.

The SECRETARY reported the death of Mr. John Neville Colley Davies-Colley, late member of the Council and of the Court of Examiners of the College.—A vote of condolence with Mr. Davies-Colley's family was passed.

The proposed alterations of several by-laws relating to the Fellowship were again advanced a stage and were signed by members present.

The PRESIDENT reported that he had received a telegram from H.R.H. the Prince of Wales expressing "sincere thanks for kind congratulations" in reply to the resolution adopted by the Council at their last meeting.

The PRESIDENT reported that he had chosen Mr. John Langton as the Bradshaw lecturer for the ensuing collegiate year.

The PRESIDENT stated that he accepted the nomination of the Council to represent the College at the Thirteenth International Medical Congress in Paris.

A letter was read from the Lord Provost of Aberdeen stating that by invitation of the corporation the Annual Congress of the Royal Institute of Public Health will be held in Aberdeen in August, and inviting the College to send delegates.—Mr. Alfred Cooper and Dr. Robert W. Reid were appointed delegates.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6770 births and 3968 deaths were registered during the week ending May 12th. The annual rate of mortality in these towns, which had declined from 23·0 to 19·6 per 1000 in the five preceding weeks, further fell last week to 17·8. In London the rate was 16·4 per 1000, while it averaged 18·7 in the 32 provincial towns. The lowest death-rates in these towns were 11·5 in Cardiff, 11·6 in Birkenhead, 11·8 in Norwich, and 11·9 in Croydon; the highest rates were 23·9 in Liverpool, 24·0 in Birmingham, 25·0 in Wolverhampton, 25·5 in Blackburn, and 29·1 in Plymouth. The 3968 deaths in these towns included 441 which were referred to the principal zymotic diseases, against 472 and 429 in the two preceding weeks; of these 166 resulted from measles, 116 from whooping-cough, 61 from diphtheria, 40 from diarrhœa, 28 from scarlet fever, 28 from "fever" (principally enteric), and two from diarrhœa. No fatal case of any of these diseases occurred last week either in Croydon or Birkenhead; in the other towns they caused the lowest death-rates in Portsmouth, Swansea, Preston, and Gateshead; and the highest rates in Plymouth, Wolverhampton, Manchester, Salford, and Oldham. The greatest proportional mortality from measles occurred in Plymouth, Bristol, Cardiff, Wolverhampton, Derby, and Blackburn; and from whooping-cough in Wolverhampton, Liverpool, Manchester, and Oldham. The mortality from scarlet fever and "fever" showed no marked excess in any of the large towns. The 61 deaths from diphtheria included 29 in London, six in Sheffield, three in Birmingham, three in Leicester, three in Liverpool, and three in Blackburn. One fatal case of small-pox was registered last week in London and one in Liverpool, and five small-pox patients were under treatment on Saturday last, May 12th, in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1693, against 1647 and 1660 on the two preceding Saturdays; 203 new cases were admitted during the week, against 165, 170, and 176 in the three preceding weeks. Influenza was certified as the primary cause of 26 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had been 411 and 417 in the two preceding weeks, declined again last week to 300, and were 15 below the corrected average. The causes of 63, or 1·6 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Salford, Oldham, Newcastle, and in eight other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Preston, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·7 and 20·5 per 1000 in the two preceding weeks, further declined to 17·7 per 1000 during the week ending May 12th, and was 0·1 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 9·9 in Leith and 12·2 in Aberdeen to 20·2 in Perth and 21·3 in Paisley. The 546 deaths in these towns included 22 which were referred to whooping-cough, 16 to measles, nine to diarrhœa, seven to scarlet fever, six to diphtheria, and three to "fever." In all 63 deaths resulted from these principal zymotic diseases, against 75 and 66 in the two preceding weeks. These 63 deaths were equal to an annual rate of 2·0 per 1000, which corresponded with the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 23 and 24 in the two preceding weeks, declined again last week to 22, of which 16 occurred in Glasgow and four in Aberdeen. The deaths from measles, which had been 24 and 15 in the two preceding weeks, rose again to 16 last week, and included nine in Glasgow, two in Edinburgh, and two in Paisley. The fatal cases of diarrhœa, which had been 13 in each of the two preceding weeks, declined last week to nine, of which five were registered in Glasgow and four in Edinburgh. The deaths from scarlet fever, which had been six and two in the two preceding weeks, rose again to seven last week, and included four in Glasgow and two in Edinburgh. The fatal cases of diphtheria, which had been three, five, and six in the three preceding weeks, were again six last week, of which two were recorded in Glasgow, two in Edinburgh, and two in Aberdeen. The three deaths from "fever," showed a marked decline from the number in the preceding week and were all registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 145, 141, and 120 in the three preceding weeks, further declined to 91 last week, and

were slightly below the number in the corresponding period of last year. The causes of 23, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 26·9 and 29·7 per 1000 in the two preceding weeks, declined again to 26·3 during the week ending May 12th. During the past four weeks the death-rate in the city has averaged 28·3 per 1000, the rate during the same period being 18·9 in London and 19·4 in Edinburgh. The 176 deaths registered in Dublin during the week under notice were 23 below the number in the preceding week, and included five which were referred to the principal zymotic diseases, against 12, eight, and 11 in the three preceding weeks; of these, three resulted from diarrhœa, one from whooping-cough, one from "fever," and not one either from small-pox, measles, scarlet fever, or diphtheria. These five deaths were equal to an annual rate of 0·7 per 1000, the zymotic death-rate during the same period being 1·6 in London and 1·7 in Edinburgh. The fatal cases of diarrhœa, which had been three, three, and one in the three preceding weeks, rose again to three last week. The deaths from whooping-cough, which had been two and four in the two preceding weeks, decreased to one last week. The mortality from "fever" showed a marked decline from that recorded in recent weeks. The 176 deaths in Dublin last week included 30 of infants under one year of age and 45 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons slightly exceeded the number recorded in the preceding week. Six inquest cases and four deaths from violence were registered, and the causes of 10, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: H. R. Gardner, lent to Pembroke Dockyard, and E. T. Burton to the *Sandpiper*.

COLDSTREAM GUARDS.

Major John F. Bateson, from Royal Army Medical Corps, to be Surgeon-Major, vice A. C. A. Alexander, deceased.

ROYAL ARMY MEDICAL CORPS.

Captain Lewis is among the invalids returning to England in the *Cephalonia*. The following transfers are ordered:—Major Donnet, from the Aden District to the Mhow District, and Major Cardozo, from the Mhow District to the Aden District. Lieutenant-Colonel Dempsey is posted to the Aden District, and Major Harwood is posted to the Bombay District.

Surgeon-Captain Francis W. Grant, 1st Banff Volunteer Artillery, is granted the temporary rank of Captain whilst serving in South Africa.

The undermentioned Surgeons on probation to be Lieutenants:—Thomas Biggam, Hugh Richardson, William Lincoln Baker, Frederick William Cotton, Frank Mardon Parry, Bertram Ramsey Dinnis, James Stuart Twigg, William John Patrick Adye-Curran, John Powell, Robert Lendon Argles, John George Foster, Ernest George Ford, Francis Spring Walker, Lydmar Moline Purser, William Bennett, Philip Graham Stock, Harold Ben Fawcus, Thomas Evelyn Fielding, Evelyn Pierce Sewell, Charles Henry Straton, Basil Sorley Bartlett, Robert Tilbury Brown, George Carroll, Dermot Owen Hyde, Albert Ernest Hamerton, George John Houghton, John Gaitskell Churton, Arthur Durham Waring, Thomas Herbert Stevenson, James Mackie Cuthbert, Farquhar McLennan, Alfred Fullam Weston, James Dorgan, Charles Hilton Furnivall, James Herbert Robinson, and FitzGerald Gabbett FitzGerald.

Surgeon-Captain Ernest J. G. Berkley, 4th Volunteer Battalion the Queen's (Royal West Surrey Regiment), is granted the temporary rank of Captain whilst serving in South Africa.

VOLUNTEER CORPS.

Artillery: 2nd Lancashire: Arnold James Greene to be Surgeon-Lieutenant. 2nd Middlesex: David John Duhig to be Surgeon-Lieutenant. *Rifle:* 3rd Volunteer Battalion the King's (Liverpool Regiment): Surgeon-Lieutenant T. H. Fisher to be Surgeon-Captain. 4th Volunteer Battalion the Norfolk Regiment: William Gloag Galletly to be Surgeon-Lieutenant. 4th Volunteer Battalion the South Wales Borderers: Surgeon-Lieutenant J. Howard-Jones to be Surgeon-Captain. 2nd Volunteer Battalion the Cameronians (Scottish Rifles): Surgeon-Captain R. T. C. Robertson to be Surgeon-Major. 1st Volunteer Battalion the Royal Sussex Regiment: Surgeon-Lieutenant C. B. Scott resigns his commission.

TRANSVAAL WAR NOTES.

Contributions or donations, however small, are earnestly requested towards the success of the Royal Army Medical Corps Stall at the National Bazaar to be held at the Royal Palace Hotel, Kensington, W., on May 24th, 25th, and 26th, 1900. The contributions or donations may be sent to the honorary secretary, Mrs. Frank Howard, 28, Cathcart-road, South Kensington. The National Bazaar is to be held in aid of the sufferers by the war, and there will be about 70 stalls representing the various regiments and corps at the front. The names of the president and vice-presidents of the Royal Army Medical Corps Stall are as follows:—President: The Lady Wantage. Vice-Presidents: Mrs. Jameson, Mrs. W. Taylor, Mrs. Preston, Mrs. O'Dwyer, Mrs. Cuffe, Mrs. Skey Muir, Mrs. W. D. Wilson, Mrs. Evatt, the Lady Alice Ashley, the Lady Jane Cole, Lady Mac Cormac, Mrs. Church, Lady Hanbury, Mrs. Cole Reade, Mrs. Butler Hamilton, and Mrs. E. M. Sinclair.

The *Middlesex Hospital Gazette* publishes the following list of Middlesex Hospital men serving at the front:—As civil surgeons: Mr. S. B. Hulke, Mr. F. P. Cayley, Dr. C. Roberts, Mr. H. F. Hine, Dr. A. P. Parker, Dr. T. H. Wells, Mr. J. J. Day, Mr. H. C. Adams, and Mr. C. H. Reissman (since returned). In the Imperial Yeomanry: Mr. Claridge.

Much praise is due to Lady Georgiana Curzon and Lady Chesham, to whom the organisation of the Imperial Yeomanry Hospitals are mainly due. The first report of the Imperial Yeomanry Hospital Fund has just been issued and is interesting reading. We quote the following passage from the report: "The duties of the bearer company's staff of surgeons and stretcher-bearers are very onerous and replete with danger. In fulfilling their duties they run equal risk with the soldier, and yet this would seem to have been the incentive that encouraged the numerous applications we received for employment in this branch of our institutions. The staff of our bearer company could have been filled twice over; and one cannot but admire the courage of these men who are ever forgetful of themselves in their desire to minister to the wounded. Their work often continues day and night, and the utmost physical endurance is required."

Major Franklin and Captain Phillips are reported as being discharged to duty from hospital.

TRANSVAAL WAR CASUALTIES.

Dr. T. W. Illingworth of the Imperial Yeomanry has died at Boshof from accidentally taking an overdose of morphia while suffering from fever. He was in his thirty-seventh year.

Civil-surgeon W. M. Parham, attached to "T" Battery of the Royal Horse Artillery, is reported to have been severely wounded at Kroonstad on May 11th.

Captain R. Fawsett, R.A.M.C., attached to the 2nd Life Guards, died from dysentery at Bloemfontein on May 7th.

Major Perry Marsh, R.A.M.C., is dangerously ill with enteric fever at Deelfontein.

THE HEALTH OF THE ROYAL NAVY.

In its forty-fourth annual report the Missions to Seamen Society traces the progress of the health of the Royal Navy, as revealed by medical statistics, since the Russian war. The report says: "The great improvement in the moral conditions of life in the Royal Navy since 1856, the year in which this society was formed, is evidenced in many ways. The health of the Royal Navy is largely influenced by the moral habits of the officers and men. ..... The remarkable result is that whereas 295 men-of-war's-men died of diseases in 1898, upwards of 700 other men lived at the end of that year who would have died had the death ratio from diseases alone (35·6 per

1000 men employed in 1898) remained the same as it was in 1856—viz., 12·1 per 1000. The Director-General's reports show that in the early 'sixties' some ships of the Channel squadron had more than 100 men of their crews at a time laid up and unfit for duty when at sea, mostly from the consequences of excesses when on shore; whilst the wards of the naval hospitals were crowded with patients from the fleet, a state of things which has long ceased to exist amongst men-of-war's-men. Since the early 'sixties' ..... the spiritual tone of the Queen's service has undergone a change for the better, with the result that, through moral as well as sanitary causes, the health report of the Royal Navy displays year by year a corresponding improvement, and the death-rate a corresponding diminution."

ROYAL MILITARY TOURNAMENT.

The Royal Military Tournament opened to-day (Friday), May 18th, for the twenty-first time, when its programme at the Royal Agricultural Hall contained all the items which are so familiar and popular with the public. The grand historical pageant is entitled "Defence not Defiance," and the combined display represents the attack and defence of a bridge.

DEATHS IN THE SERVICES.

Surgeon-General Nesbitt Heffernan, A.M.S. (retired), on May 3rd, at Cheltenham, in his eighty-sixth year. He joined the service in 1841, became surgeon in 1851, and surgeon-major in 1861. In 1867 he reached the rank of deputy surgeon-general, and retired in 1876 with the rank of honorary surgeon-general.

The *Keldonan Castle* arrived at Southampton on May 14th. She brought 310 invalids who were admitted to the Royal Victoria Hospital, Netley.

Mr. F. H. Hardy, M.R.C.S. Eng., L.R.C.P. Lond., of Guy's Hospital, who has been serving under the Foreign Office in Central Africa, has been nominated by the Secretary of State for War as a Surgeon-on-Probation for the Royal Army Medical Corps and has joined the Army Medical School at Netley.

Mr. Charles Gibbs, F.R.C.S. Eng., assistant surgeon to Charing-cross Hospital and lecturer on Practical Anatomy in its medical school, has been appointed senior surgeon to the Langman Field Hospital, South Africa.

Correspondence.

"Audi alteram partem."

"THE INTERNATIONAL CONGRESS OF GYNÆCOLOGY AND OBSTETRICS."

To the Editors of THE LANCET.

SIRS,—We are directed by the Council of the British Gynæcological Society and by the Organisation Committee of the International Congress of Gynæcology and Obstetrics to request your kind insertion of the following reply to the letter appearing under the above heading in THE LANCET of May 12th.

In the letter signed by the past and present teachers of gynæcology and obstetrics in the metropolitan medical schools and in the covering letter of Dr. W. S. Playfair two reasons are assigned for the inability of the signatories to take any share in promoting or joining this Congress. 1. That those who have issued this invitation have assumed a representative position to which they are, in the opinion of the signatories, not entitled, and which they, the signatories, find themselves unable to recognise. 2. That the signatories object to the manner in which Professor A. R. Simpson was elected President of the Congress.

With regard to the first point, the British Gynæcological Society, which issued the invitation, is not concerned to defend itself against the opinion held by the signatories, that it "has assumed a representative position to which it is, in their opinion, not entitled." If a glance through the list of Fellows of the Society were not sufficient to correct such an opinion, the fact that the permanent committee of the International Congress of Gynæcology and Obstetrics, representing the leaders of these branches of medicine on the continent and in America, requested the Society to repeat the invitation which it issued first in 1899, testifies to the opinion of the Society's representative character which is at least held abroad. In accordance with this request, the invitation was repeated at Amsterdam in 1899, being personally presented by Dr. Robert Barnes, honorary President of the British Gynæcological Society, and an ex-President of the Obstetrical Society of London.

As to the manner in which Professor Simpson was elected, he was nominated at a meeting of the Council of the British Gynæcological Society, on whom the duty necessarily devolved. Professor Simpson was mentioned on the grounds, firstly, that he was an ex-President of the Society and one of of its most honoured Fellows; secondly, that before the Society's invitation was accepted his name was suggested by members of the Permanent Committee on the continent and in America as that of a man who would be acceptable to all the members of the Congress. In conclusion, we can only express our regret that our *confrères* the teachers of gynæcology and obstetrics at the metropolitan medical schools should have found themselves obliged to come to the decision expressed in their letter.

We are, Sirs, yours faithfully,

W. J. SMYLY,
President British Gynæcological Society.

H. MACNAUGHTON-JONES,
Chairman Organisation Committee of the International Congress of Gynæcology and Obstetrics.

ARTHUR E. GILES,
Honorary Secretary of the British Gynæcological Society and of the Organisation Committee of the Congress.

May 15th, 1900.

THE CAUSATION OF SCURVY.

To the Editors of THE LANCET.

SIRS,—Having read the interesting account by Mr. F. G. Jackson and Dr. Vaughan Harley of their experimental inquiry into the causation of scurvy in THE LANCET of April 28th (p. 1184), there is one point which struck me and must have struck many others. How does the theory that the disease is due to the poison of the ptomaines of animal meat explain its development in infants reared on a diet which contains no meat at all? Or how does it account for the appearance of scurvy in patients who submitted to the Schrothian treatment—a *régime* which entailed a purely vegetable diet? In fact, at Schroth's own establishment fatal cases of scurvy were recorded and in consequence an addition of fresh meat was found necessary for its prevention.[1]

I am, Sirs, yours faithfully,

ERIC PRITCHARD.

THE PRESIDENCY OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

To the Editors of THE LANCET.

SIRS,—Inclosed please find a circular letter by means of which it is proposed to get up a congratulatory testimonial to a very distinguished member of our profession—Dr. Thomas Myles. I write to ask if you will notice the matter in your widely circulated journal amongst whose readers over the world there would be a large number of Dr. Myles's pupils and friends.—I am, Sirs, yours faithfully,

W. J. GREER, F.R.C.S. Irel.

Chepstow-road, Newport, Mon., May 12th 1900.

[INCLOSURE.]

DEAR SIR,—You are probably aware that Dr. Thomas Myles will attain the Presidential chair of the Royal College of Surgeons in Ireland in June next. At a private meeting of a few friends and admirers of the President-elect it was decided to give his old pupils and others an opportunity of acknowledging their indebtedness to him and also to cordially congratulate him on achieving the leadership of the surgical profession in Ireland.

With this object in view a subscription list has been opened and any donation which you may feel inclined to send to the undersigned will be duly acknowledged. It is earnestly hoped that each subscriber will endeavour to make the movement as widely known as possible.

The list will be closed at the end of June and subscriptions should be forwarded immediately to—

R. LANE JOINT, 84, Harcourt-street, Dublin.	Hon. Secs.
W. J. GREER, 2, Chepstow-road, Newport, Mon.	
R. F. MACCRAITH, 2, Langdale-road, Sefton Park, Liverpool.	
A. B. MITCHELL, 4, College-square, N., Belfast.	
W. J. CORRIGAN, Cardiff.	Treasurer.

Dublin, May, 1900.

[1] Th. Jürgensen: Deutsches Archiv für Klinische Medicin, Vol. i., 1866. Von Ziemssen's General Therapeutics, vol. i., p. 325.

THE CASE OF THE LATE MR. ALFRED BOURNE.

To the Editors of THE LANCET.

SIRS,—We shall be obliged, and it will be an act of charitable kindness, if you will be good enough, through the columns of THE LANCET, to give publicity to this appeal to the medical profession on behalf of the widow and children of the late Mr. A. Bourne, surgeon, Osmotherley, Yorkshire. Mrs. Bourne, with six young children, by the unexpected and sudden death of her husband at the age of 37 years, has been left totally unprovided for, with no friends who are in a position to give the necessary help. Subscriptions will be thankfully received and acknowledged in the columns of THE LANCET by the undersigned.

We are, Sirs, yours faithfully,

J. A. HUTCHINSON, M.D. Durh., Northallerton.
WILLIAM BAIGENT, M.D. Durh., Northallerton.
THOMAS YERMAN, J.P., Osmotherley.
WM. DOBSON, J.P., Osmotherley.
WM. BOVILLE, Northallerton.

Northallerton, Yorkshire, May 9th, 1900.

"SEPTIC THROMBOSIS OF THE CAVERNOUS SINUS."

To the Editors of THE LANCET.

SIRS,—In an annotation in THE LANCET of May 5th (p. 1293) you record a case of septic thrombosis of the cavernous sinus which arose from a tooth abscess. Perhaps the following notes of a similar case may serve to emphasise the possibility of so common an affection as toothache having so serious a sequel. On June 5th of last year a girl, aged 18 years, came to the casual department of the Newcastle Royal Infirmary complaining of toothache with swollen face of two weeks' duration. She looked ill, there was a large tender swelling over the left side of the lower jaw, and she was unable to open her mouth. Under chloroform anæsthesia the mouth was opened with a gag and two very carious loose lower molars were removed from the left side, a large quantity of very fœtid pus escaped into the mouth, and as the abscess was apparently freely opened an incision into the swelling from the outside was purposely avoided. The girl was given a mouth-wash and fomentation to apply to her cheek. At this time her temperature was not taken; there was no proptosis or other sign of grave mischief. I thought she had only a large alveolar abscess which would soon get well and allowed her to go home. Two days later, on June 7th, the girl came back. She was exceedingly ill, the temperature was 104° F., and the pulse was correspondingly rapid. There was very marked proptosis of the right eye with œdema of the lids and conjunctiva and fixidity of the eyeball. The swelling over the jaw had subsided and pus was discharging freely into the mouth. She complained of very severe headache. An incision was made through the conjunctiva over the eye, and a pair of sinus forceps was passed to the back of the orbit, but only a little thin pus escaped. She was given anti-streptococcic serum. Next day she was very much worse; her temperature was 104° and there were retraction of the neck and vomiting, with a very marked meningitis cry. An abscess over the left ascending ramus of the jaw was opened; the upper and lower jaw-bones were felt to be quite bare. The patient got rapidly worse and died next day (June 9th) with a temperature of 104·6°. She had no rigors and there were no signs of cavernous thrombosis on the left side. At the post-mortem examination there were marked septic basal meningitis and septic thrombosis of both cavernous sinuses; on the right side the orbital veins were thrombosed and there was orbital cellulitis on the left side; the orbital contents were healthy; both lateral sinuses were filled with septic clots. The left pterygoid region was filled with necrosed septic tissue and pus had found its way into the skull through both the foramen ovale and foramen rotundum. There was a good deal of pus in the left temporal muscle sheath and the periosteum was entirely stripped from both upper and lower jaws on the affected side. I have now little doubt that when the girl came to the Infirmary first she was much more seriously ill than I then supposed her to be. Apart from the practical importance of the case as illustrating an unusual cause of an unusual condition it is difficult to explain why the thrombosis should have been more extensive on the right side which was presumably farthest away from the primary focus. While the patient was in the Infirmary she was under the care of Mr. Page, and it is through his kindness that I am allowed to publish this note.

I am, Sirs, yours faithfully,

G. GREY TURNER.

Royal Infirmary, Newcastle-on-Tyne, May, 1900.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—Dr. G. Mowat's letter in THE LANCET of March 24th (p. 884) requires a few words of answer. The fact which he now intimates for the first time—namely, that death occurred during the stage of excitement—is the strongest possible proof of my contention that his original description of the case was so meagre as to be useless. Possibly he carries the same principle—the principle of sketchiness—yet further, for he seems to imagine that the clinical observation of a patient under chloroform close enough to ensure the subsequent unity of a full and accurate report of his symptoms places his life in danger. Can one argue with such an one? The question is a much wider one than Dr. Mowat appears to conceive. Experiments on the lower animals have failed to produce any unanimity on the subject in the profession. The publication of full and accurate clinical descriptions of deaths under and from chloroform appear to afford the only prospect of such settlement; and I am not alone in thinking that here, as in other departments of medicine, general accurate knowledge will bring general confidence and increased safety. I am not among those who imagine that the saving of many lives yearly is a matter of purely scientific interest, so I repeat my appeal for full and accurate descriptions of all cases of death under chloroform.

I am, Sirs, yours faithfully,

CLAYTON LANE, M.D. Lond.,
Captain, I.M.S.

Lucknow, N.W.P., India, April 25th, 1900.

"A PARASITIC CRUSTACEAN AS A FOREIGN BODY ON THE CORNEA": A CORRECTION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of April 7th, p. 1002, a very interesting condition is described by Dr. Rayner Batten of a fishmonger who had a peculiar growth on the cornea of the left eye. From this he removed a small scale-like parasite, of which a very careful and accurate drawing is given. This parasite was referred to Dr. Harmer, F.R.S., who stated it to be one of the caligidæ, probably *Caligus curtus*. This is an error, as the parasite, which has kindly been sent to me by Dr. Batten, shows. Though it belongs to the caligidæ it should be placed in the genus *Lepeophtheirus*, distinguished from the genus *Caligus* by the entire absence of the two prominent lunulæ on the frontal plates. The specimen was a male of *L. pectoralis*, Müll, found very abundantly on most flatfish, particularly plaice and flounders. These I have kept alive for hours in water in a watch-glass, but though for years in constant communication with men handling fresh fish I have never before met with one who had become the temporary host of these parasites. Dr. Harmer did not intend his diagnosis of the species for publication, but as it has appeared he quite agrees with me that the correct nomenclature should be used.

I am, Sirs, yours faithfully,

May, 1900. P. W. BASSETT-SMITH, R.N., F.Z.S.

THE HOT SPRINGS OF BATH.

To the Editors of THE LANCET.

SIRS,—I wish to bear testimony to the magnificent efficacy of a course of these baths. The whole system of treatment is so rational and so perfectly managed and the attention and care shown so universally good that I am certain that there is no other treatment (except it may be the Tallerman hot-air process), combined with the drinking of the Bath hot-mineral water, half so efficacious for lumbago and sciatica generally of a gouty nature.

It is unnecessary for me to enter into particulars how the douches of a temperature of 106° F. with a force of 16 pounds and of the hot mineral baths with massage are used.

I can only say that although I am only able to spare a fortnight to the treatment I am leaving Bath feeling in every respect pounds better. This spring, from all accounts, sciatica appears to have been epidemic. Let me say too with regard to this complaint, having twice suffered from it, that, to my mind, there are two forms, the lower and the upper. The first time I had the lower form, when the sciatic nerve from its notch down the back of the thigh gave the most agonising pain, and the outer leg and ankle were also very painful. This time I have suffered from the upper form, when the first point of pain was in the upper part of the buttock. To name rightly the nerve branch affected I should have to refer to the anatomical work of my good old teacher, Professor Vyner Ellis (so recently dead), which is at my home. From the buttock the pain has been distributed through the groin, and down the iliofemoral band to a short distance below the knee, the knee often being particularly painful.

The lower form, though the pain was continuously intense, only incapacitated me from work for ten days. The upper form of sciatica kept me in bed three weeks and three days, and then when I tried for some days to work I had to give up, the pain being too severe for me to keep up against; and now after a fortnight's treatment in Bath, though returning to work, I am still at times somewhat crippled by the pain.

For these reasons I am of opinion that there are two kinds of sciatica, upper and lower, and that the upper kind is by far the worse of the two. When the lower form attacked me I do not remember that my leg lost at all in size. In this attack after the first month the upper part of my thigh lost two inches in circumference.

I am, Sirs, yours faithfully,

Pierrepont-street, Bath, May 15th, 1900. PUGIN THORNTON.

M.D. DURHAM FOR PRACTITIONERS.

To the Editors of THE LANCET.

SIRS,—Kindly allow me to answer through your columns some questions respecting the above degree. Intending candidates who have the files of THE LANCET by them will find a letter signed "M.D." on Oct. 15th, 1898, containing some sound advice. I, for one, am grateful to him for it. For those who have not the letter by them I would say: write to Dr. Howden, the courteous secretary of Durham University, for a copy of the last Calendar, which gives the text-books advised and some of the recent papers given. Get the latest editions. *Either* the Latin or Professional may be taken separately or first. Unless Latin is an easy subject I advise taking it first and *alone* so as to be free for purely professional subjects. Get up *thoroughly* urine and urinary microscopic and pathological and histological work. If possible do some clinical work and go over a good museum once or twice. Those near London will get much help in hygiene by going over the Parkes Museum. The examination is thorough, but perfectly fair and just. The clinical work *must* be done well. Do not go up with the idea that the degree is given away or you will regret it. Remember that you are again a student undergoing examination. To those who have few opportunities I would advise them to go up eight or nine days before the examination and attend a special class for this degree which is given. They will be taken over all the work, particularly the pathological and microscopical work, which is so essential. I wish success to all intending candidates and hope they will have as much pleasure in going over the old ground as I had. After an interval of 20 years it was a great treat to be again examined by one of the kindest and most eminent of London surgeons. Operative surgery has made great strides since the day when last we met.

I am, Sirs, yours faithfully,

May 15th, 1900. M.R.C.S. ENG.

BRISTOL LUNATIC ASYLUM.—The thirty-ninth annual report of this institution, which has just been issued, shows that on Dec. 31st, 1899, there were 778 patients—viz., 379 males and 399 females—in the asylum. The highest number resident at any one time in the year was 799. The extension of the asylum buildings, with the exception of the isolation hospital, will shortly be completed and will be ready for occupation early this summer. The committee, in concluding the report, expressed their high appreciation of the manner in which the medical superintendent and the officers and staff of the asylum had performed their respective duties during 1899.

THE PARIS EXHIBITION.

(FROM OUR OWN CORRESPONDENT.)

THE name remains though the substance has gone. The Gallery of Machines is still known by that name though, as already explained, it no longer contains any machinery, for in its centre there is the Hall of Festivals and on each side are arranged alimentary and agricultural products. The gallery which is parallel and next to this vast and magnificent iron and glass structure does contain machinery in motion, huge boilers, power-producers, and electrical machinery. This is the most backward part of the Exhibition. Here chaos reigned supreme long after the Exhibition was opened. There was bare earth where there should be carpeted boards, some portions were absolutely impassable, and the visitor was constantly turned back, first at one point and then at another, by attendants whose duty it was to prevent sightseers from incurring the risk of accident. Yet even here, by going upstairs to the galleries, there is a good deal to be seen, for Class 112 has nearly all its exhibits in order. This class deals with poor relief and is situated close to the Hall of Festivals, and a portion of it was officially inaugurated last week. Here all private and public organisations and charities for the relief of the poor display drawings, charts, maps, models, statistical tables, &c., that may serve to illustrate their work. Then, again, in the gardens of the Champ de Mars facing the monumental Château d'Eau the aspect is that of a railway goods station rather than that of pleasure-grounds. The railway lines have not been covered up and numerous railway trucks are still there, though the process of unloading them is postponed till after the grounds are closed to the public. Nor is there any immediate need to clear this space till the Château d'Eau which it faces is itself finished. This, however, is approaching completion. Nearly all the scaffolding has been removed and the sculptors are giving their final touches to the nymphs who are gracefully poised over and about the waterfalls. That the largest structure, the principal architectural feature, of the Exhibition should consist of a succession of cascades issuing from within a monumental arch is certainly a very original conception. Above and around, the gilding and the white statuary, and at night the blaze of electric light, will produce a most impressive effect; and it is only right that in front a vacant space, large enough to hold thousands and thousands of people, should have been left free of all encumbrance. This space, which at present constitutes the principal goods station of the Exhibition, will soon be clear, and when all is complete it will attract visitors who may be counted by the million.

On the westerly side of the Eiffel Tower there are still a good many buildings which are not yet finished, and here dust or mud and cobbles and sharp stones still prevail, but on the opposite side better progress has been made. Indeed, the mason and the plasterer and scaffolding and rubbish-carts are now confined to a few corners and localities and genuine progress towards completion has been made. Every day some new section or pavilion is finished which very often forms of itself a sufficient motive for a visit to the Exhibition. Thus, in the Avenue of Nations the vast Italian Pavilion opened its doors the week before last. Under the gilt cupola reproduced from St. Mark's of Venice and within walls that imitate those of the palace of the Doges the artistic glass-work, ceramic arts, sculpture, and mosaics, &c., of Italy are exhibited, while in a gallery running round the building the technical schools, the universities, and the municipalities display drawings, and charts, and specimens that explain what has been done to improve the health and education of the people. Immediately behind this palace Denmark shows a model middle-class dwelling to which the public are now admitted and which illustrates the home life of that country. The Hungarian Pavilion is also completed and forms a sort of synopsis of the history and avocations of the Hungarian people. On one side there is a reconstruction of the Abbey and the Church of Jaak, and on the other side the frontage of the Vajda-Hunyad mansion and the fortress of Koermoeczbanya, together with other specimens of Hungarian architecture; while inside the arts, and sciences, and the industrial progress of that interesting people are illustrated by numerous exhibits. The Finland Pavilion is also open and here the visitor may appreciate

how much has been done to spread education among the Finnish people. Of course, many of the Finnish exhibits relate to fishing but the man of science will be interested in a gigantic meteorite which fell at Björboele on May 12th last year. Close by also in the Avenue of Nations the specimen houses or palaces of Belgium, Monaco, Sweden, and Spain have been completed and opened to the public last week, so that the majority of these remarkable buildings are now accessible. On the opposite side of the river the Social Economy Palace is now open, though all the exhibits are not as yet in their places; and finally the two permanent stone palaces of the Fine Arts and of the Retrospective Arts were opened to the public on May 1st. These palaces, which are situated in the Champs Elysées, are in themselves well worth a journey to Paris. On the whole, though it is still advisable to postpone going to Paris for a week or two, if this cannot be done conveniently the Exhibition to-day is so far advanced as not to disappoint the visitor. Though the above description of the present condition of the Exhibition may not be considered altogether favourable it must be borne in mind that we are still only in the middle of the month of May and that the last exhibition held in 1889 was not opened before the 6th of that month.

Great capital has been made in certain quarters out of every miscalculation, delay, or accident. Thus the report is very generally spread abroad that a considerable number of lives have been lost in the building of the Exhibition, and not a few Frenchmen go about repeating that at least one life is lost per week through the numerous accidents that occur. Fortunately, the chief of the Exhibition medical service (Dr. Gilles de la Tourette, Professor at the Faculty of Medicine) has kept a careful record of these casualties. According to his statement there were nine deaths due to accident during the process of building in 1896, during 1897 there were only two deaths, and in 1898 also only two deaths, while in 1899 there were seven deaths, including those of two men who fell into the Seine and were drowned. This is far from being one death per week. All these men died on the spot or in a few hours, and all those who were injured have recovered under treatment. Considering the dangerous character of some of the work and the great height to which many of the scaffoldings were raised the number of accidents is below and not above the average. Further, the injured workmen received, not only their insurance money, but half their salaries during the whole time of their treatment. There are fully installed ambulances, or medical posts, on the Champs de Mars, the Trocadéro, the Invalides, and the Champs Elysées, and a fifth post is about to be organised. A surgeon and a staff of trained nurses are always present at these posts. They are connected with each other and also with the neighbouring hospitals by telephone. There is a large stock of bandages, splints, &c., at hand, and further outside help can be immediately obtained by telephone. Full provision has been made, not only to meet the accidents which under normal conditions are likely to occur, but also to cope with a panic or some altogether exceptional disaster.

Thus, in answer to the complaint that the Exhibition is not ready it may be said that no other similar undertaking was so far advanced at so early a period of the year. With regard to the statement that the Exhibition is dangerous on account of the number of accidents which occur, it may be urged that the number of fatal accidents has been below the average and that the only casualties in which members of the general public suffered occurred outside the Exhibition grounds in the Avenue de Suffren, which is under the control of the Municipality and not of the Exhibition authorities.

Paris, May 13th.

GERMAN SURGICAL CONGRESS.

(FROM OUR BERLIN CORRESPONDENT.)

(*Continued from p. 1402.*)

Operations for Contusions of the Abdomen.

PROFESSOR VON ANGERER (Munich) read a paper upon this subject, in the course of which he said that in abdominal contusions the prognosis and treatment differed according as the cases were attended or not attended by perforation of the intestines. Contusions without injury of the intestines scarcely required treatment, because they were usually recovered from spontaneously within a short time. It was, however, sometimes difficult to say whether a perforation of the intestine had occurred or not, as the symptoms of this condition were very like those of severe shock. Unconsciousness, vomiting, and weakness of the pulse were symptoms of shock as well as of perforation of the intestines. It was, however, characteristic of shock that these symptoms were of short duration, whilst in perforation of the intestine signs of peritonitis generally made their appearance in a few hours. If the vomiting continued for several hours and became worse perforation was almost certain. Also the pulse-rate, the respiration, the temperature, and the tension of the abdominal muscles must be taken into account. The presence of gas in the abdominal cavity could be ascertained only when a considerable quantity of it had penetrated through the intestines. With regard to the treatment Professor von Angerer strongly recommended early operation—laparotomy and suture of the intestinal wounds. He had collected histories of 159 cases where no operation had been performed, the result being that 149 died and 10 had to be operated on eventually, because an intestinal fistula had developed. The operation ought to be performed as early as possible, even before the symptoms of shock had quite disappeared, so as to avoid the complication of peritonitis.—In the discussion Dr. STOLPE (Breslau) showed the difficulty of an exact diagnosis of intestinal perforation by mentioning a case where an injury of the spinal cord had produced paralysis of the intestines and where the diagnosis of perforation had been made.—Professor HAHN said that in traumatic rupture of the intestines sutures alone were not sufficient; he advised that the injured part should be resected previously to being sutured, especially when the intestine was severely contused.

Growths of the Omentum.

Professor BRAUN (Göttingen) read a paper on Solid Growths of the Omentum following abdominal operations. Such growths which sometimes caused severe pain consisted of chronic infiltrations of the omentum and might appear several months after the operation. They might disappear spontaneously, or suppurate or continue to persist in the state of chronic infiltration. They were caused by mechanical injury of the omentum during the operation. Sometimes they had to be removed by a second operation.—Dr. FRIEDRICH (Leipsic) said that he had studied changes occurring in animals after ligature of the omental vessels. He had found that in guinea-pigs ligature of those vessels produced small necroses in the stomach and the liver, whilst the kidneys and the spleen were left intact. In rabbits these necroses were seldom observed and in dogs and cats never. It was possible that gastric ulcers following abdominal contusions were caused also by traumatic lesions of the omental vessels.

Osteoplasty of the Tibia.

Dr. GROSSE (Halle) showed a child with Congenital Absence of a Large Portion of the Tibia, for which he had performed a successful plastic operation. Taking advantage of an amputation of the leg which had to be performed on another patient, he removed from the amputated tibia a portion corresponding to the deficiency and inserted it into the abnormal tibia. Skiagraphy showed that the implanted piece, which was two inches long, had become firmly united, and presented the appearance of normal bone. The leg thus operated on, although smaller than the other one, was now a useful limb.

Disinfection of the Hands.

Dr. SARVEY (Tübingen) stated that absolute sterility of the hands of the surgeon was not obtained by any of the various methods recommended for that purpose. The relatively best results were got by the use of hot water and alcohol (Ahlfeld's method) or by the use of spirit of soap (Mikulicz's method). Mere mechanical treatment of the hands with marble soap was not sufficient, disinfection with chemical agents being indispensable.—Dr. VOLLBRECHT (Düsseldorf) recommended a solid compound which contained spirit of soap and might be used in the form of tubes.—The use of indiarubber gloves as employed by Mikulicz was strongly recommended by Professor SPRENGEL.

A Disease of Pianists.

Professor DABLUDOWSKI (Berlin) read a paper on cases of Nervous and Muscular Affections observed by him in Pianists, especially in young players. By the excessive stretching of the fingers the tendons, joints, and ligaments of the hand were injured. This condition might become chronic if the patient continued to play, and in course of time the nerves

were involved. Neuralgic pains of the nerves of the arms might occur and were liable to extend to the shoulder and the back. Atrophy of the muscles might be a result of the disease in severe cases. The disease was caused by the circumstance that the ordinary keyboard of pianos was too long for the hands of young players. A child when learning to play the violin used a small instrument, and in like manner pianoforte-makers ought to construct instruments with a keyboard adapted to the hands of children. The patients must abstain from playing for a certain time, and massage combined with electricity and bandaging was advisable.

Surgical Applications of Metallic Magnesium.

Dr. PAYR (Graz) has devised a new method of joining the ends of injured blood-vessels. Very small tubes of metallic magnesium are put into one end of the divided vessel, the other end is then drawn over the tube, and both ends are united by ligatures. The magnesium tube is ultimately absorbed. Divided nerves might be joined in the same way. Dr. Payr recommended metallic magnesium as a material for Murphy's buttons. Magnesium wire was not flexible enough to be used in the usual way for sutures; but perhaps the efforts to produce a more flexible metal would be successful, so that the method (which had hitherto been tried only in animals) might become useful for the human subject also. Magnesium was said to be an excellent material for sutures, because it was easily dissolved in the tissues.

Gangrene of the Lower Extremities.

Professor BUNGE (Königsberg) read a paper on the Different Forms of Gangrene of the Lower Extremities. He had found by numerous microscopical researches that in diabetes as well as in senile gangrene there was a hypertrophy of the intima of the arteries by which coagulation of the blood was caused. The deficient circulation produced the gangrene. On the first appearance of the symptoms the administration of iodine was useful. The acute intermittent limping of the patient was (according to Erb) a characteristic symptom by which the surgeon ought to be led to make a careful examination of the blood-vessels of the extremities.

Among the other papers which were read mention may be made of those by Dr. VULPIUS (Heidelberg) on Scoliosis, by Professor VON BERGMANN (Riga) on Gastro-enterostomy, and by Dr. LEXER (Berlin) on Teratoid Growth. Professor Czerny (Heidelberg) was elected president of the Congress to be held next year.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending April 7th show the following figures: remaining, 36; admitted, 29; died, nine; remaining, 56. The total number of cases at this date was 83, and the total number of deaths 26. Discharged, one; total "contacts" isolated, 424; and cases among "contacts," five. Several patients are now fit for discharge; several others are fit for removal from the acute to the convalescent wards. Deaths before discovery continue to be recorded and these as before noted are recorded as admissions.

The want of evidence that the disease is directly communicable from the sick continues; no more than five cases have arisen among "contacts" subsequently to their removal from home and all fell ill before the fifth day from removal. The term of detention for "contacts" has been reduced to five days. The Government will not approve of medical supervision at home and no doubt removal for a short term has advantages with regard to disinfection, laborious and embarrassing as it may become when the daily number of cases increases. In any case power to remove all should be retained, and, when it appears that the infection was taken at the house where the patient lay, should, of course, be exercised. It may be remembered that the first case of all was judged to have been infected by a flea-bite. Since then the bleb which usually attends this mode, according to Simond, has been observed in four cases altogether. In two the bleb had been broken, as in the case of the one discharged patient, but in the fourth it was still entire and the bacillus was found in the serous contents in rather small numbers. It may be that infection occurred in the same way in some other cases. Under the circumstances it has not been possible to make such observations with exact regularity, yet the record shows that this is hardly the common way, unless, indeed, the bleb is often wanting in other than septicæmic cases. The death-rate continues low and probably is rather less than 33 per cent.; but the treacherous nature of the disease has become evident, many patients having died unexpectedly.

The course of the epidemic is quite clear. It certainly began at the line of wharves already mentioned[1] and the houses immediately adjacent thereto; it spread to parts of the city adjoining that portion; outlying cases could be connected with one or other locality for a rather long time; then outlying cases which could not be so connected began to occur. And that the infection is spread by or with the migration of rats is just as clearly established. The presence of diseased rats has been demonstrated in some of the outlying neighbourhoods where "indigenous" cases have occurred and is safely presumed as regards other cases on indirect evidence of the usual kind. Death to rats has been steadily preached, in season and out of season, from the beginning, but unfortunately with little or no practical effect. In connexion with this part of the subject it is necessary to explain that the City Council has for many years dumped its garbage on an area of 30 or 40 acres of land lying outside the city limits, and forming part of a public recreation reserve for which it is trustee, but still in a thickly populated neighbourhood. This faulty method, which, moreover, is carried out with the crudest apparatus and gross carelessness, has been subject of remonstrance by the Department of Public Health, by Governments, by citizens, and by private individuals for many years past; the corporation itself has a committee of inquiry about every five years, and has received reports from its officers on destructors. But erection of destructors has clearly been regarded as a waste of money, so long as the dump could possibly be used, for nothing practical resulted. The place is, of course, infested with rats and is the resort of large numbers of rag-pickers; children also go there and hunt for condemned bananas and other fruits, of which they choose the best to eat. Sussex-street wharves are in the city and the corporation removes more or less of the garbage which accumulates there to the refuse-tip just mentioned. It cannot be denied that for several weeks before the beginning of March infectious matter, partly or wholly in the shape of the bodies of dead or dying rats, must have been taken to the refuse-tip. In the meantime quarantining and cleansing of large areas of the worst parts of the city continue. The work is very thoroughly and rapidly done; about 2000 men are thus employed at 7*s.* a day and their keep. They are managed by a contractor specially engaged and are supervised by the chief sanitary inspector and a staff of 30 trained inspectors of nuisances.

The Government of Victoria has summoned a conference of the principal medical officers of the several Governments, to be held at Melbourne. This necessarily excludes New South Wales, since neither the chief nor any other member of the staff can, of course, be spared at this time. Remonstrance has been made by some of the other Governments; it seems to be thought by them that the only city in which plague is present would be the best in which to hold a plague conference. On the whole matters are now pretty well organised, but the way in which almost everyone, from the inhabitants of villages 800 miles away to the corporation of the city of Sydney itself, relies upon the central Government and its departments to execute everything, and to find, not merely money, but actual labour and material, is enough to paralyse the most active administration.

April 10th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Alleged Adulteration of Sugar.

SUGAR forms a very large element of food consumption in daily life and a very considerable trade in the country. It is important, therefore, that anything contributing towards its adulteration or deterioration should be carefully watched

[1] See THE LANCET, April 14th and 28th, 1900.

and guarded against. What is Demerara sugar? was the subject of an extended and close inquiry at the Birmingham police-court on May 11th. A local grocer was summoned for selling Demerara sugar which was not of the nature, substance, and quality of the article demanded, inasmuch as it contained 100 per cent. of dyed sugar crystals. The prosecution was undertaken by the Health Committee of the town council under the Food and Drugs Act. A large number of those interested in the trade and a number of grocers and chemistry experts were called as witnesses. It was stated that the sugar was stained with some aniline dye and it was alleged by those engaged in the trade as planters, brokers, or importers that Demerara sugar meant pure cane sugar undyed and grown in Demerara. For the defence it was urged that dyeing did not constitute an offence because dyeing did not alter the nature, substance, or quality, and that in the third section of the Act it was only an offence to colour or stain an article of food in such a way as to make it injurious to health. This sample was what was commercially known as Demerara sugar and there was no proof to the contrary. There was no intent to defraud. A number of witnesses were examined and in the end the case was dismissed by the magistrates. They announced on application for "specific findings" that they were agreed that the sugar was dyed, but they believed that it was of the nature, substance, and quality of Demerara sugar. Thus the question remains as it was before the trial.

The University of Birmingham.

The Chancellor of the new University, the Right Hon. Joseph Chamberlain, has given directions for a special meeting of the Court of Governors of the University to be called for May 31st; the business will be to receive the charter of incorporation of the University and to elect certain officers. Slowly but surely the scheme of the University is attaining definite and substantial form.

"The Long Pull."

Of some interest to temperance advocates is the subject of "the long pull," by which is meant an additional quantity of beer being given to that ostensibly ordered. In view of the advanced price raised by the tax on beer the Brewers' Association have issued circulars to licence-holders requesting that this custom of overdrawing should be discontinued or modified. The proposals are that for outdoor trade not more than 25 per cent. over measure be given and for indoor trade the exact measure and no more. If this is loyally adhered to one incentive to drinking will be considerably mitigated, and consequent benefit accrue to the trade and to the individual drinker.

May 15th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Conference on Medical Organisation in Manchester.

MOST of us will agree with the opening comment of your Special Commissioner[1] on the late Conference on Medical Organisation in Manchester that it showed the need of organisation in the profession; and also that this should have been the chief subject of discussion, while the airing of grievances might have been left for some other occasion. Nor is his somewhat sarcastic severity greatly to be deprecated if it only brings the profession to a knowledge of its infantile simplicity as to the science and art of organisation. It must be remembered, however, that it was a first and tentative effort and a day of small things. The individual atoms of which the profession is composed have hitherto been too often mutually repellent, and the medical Lord Kitchener who will weld them into an organised body has not yet made his appearance. It is, however, something to have become aware of a want and this must always precede its supply. This attempt to make a beginning should not be stifled or discouraged but rather encouraged, as your Special Commissioner puts it, "to plan some specific action."

Lead-poisoning in Manchester.

At the Manchester County Court on May 14th an action was brought by a man against his employers to recover damages for lead-poisoning. He had worked for them for some years until September last in a room in which brass fittings were made. He was then sent to another department where the fittings were put together, and was taken ill there in November, and had not been able to work since. The case is interesting as showing some of the ways in which lead-poisoning occurs. In the room where these fittings were put together a number of men worked and in the process white lead had to be used. To ensure that the fittings were air-tight the workman had to suck them with his mouth, a pretty obvious source of possible poisoning. For large work an air-pump was provided, but "if used for small work it would have involved such a waste of time as to be out of the question." The air of the room "was much deteriorated by the use of a lead-burning machine," which was another bad point. Under the Factory Act suitable washing appliances ought to have been provided, but no such provision had been made. "There was only a bucket" which was provided by the men themselves, water had to be carried from another part of the premises, and, though soap was provided, the foreman discouraged washing. The plaintiff said that the foreman had distinctly stated that "washing was a waste of time and that he would not have it." The remarkable thing is that all the men employed were not poisoned. The defendants' advocate, after consulting with his clients, was magnanimous enough to say that "if his Honour thought, after hearing the medical evidence, that a cause of the poisoning was the absence of lavatory convenience they would pay whatever damages his Honour thought right," which had the appearance of being generous. Mr. W. Ferriday, who had attended the plaintiff, thought the want of washing accommodation even more important than the sucking of the tubes, while Professor J. Dixon Mann could not say which was the main cause of the lead-poisoning. His Honour Judge Parry did not think suitable washing conveniences had been provided, but he "thought that it had merely escaped the defendants' attention and they had since put themselves right in the matter. They had always been ready to meet the plaintiff's claim in a fairly reasonable spirit." It seems from the evidence that this utterly indefensible state of things had "escaped the defendants' attention" for a good many years as if they had all been "sleeping partners." Judgment was given for the plaintiff for £45 and costs, which seems easy for the defendants when we are told that the unfortunate plaintiff "was now advised that he would never be able to go back to the work which inflicted the injury upon him and it was doubtful whether he would be able to go back to brass-finishing at all."

Chorlton Union Workhouse.

Dr. Frederick Hoyle and Dr. Peter Joseph Burke have been appointed respectively senior and junior medical officers at the Withington Workhouse at salaries of £130 and £120. The question was asked why there was only one application for the senior appointment and the questioner presumed that if they offered a better salary they would have had more candidates. Dr. J. M. Rhodes thought that so many surgeons were attracted by service in South Africa that local appointments did not attract the former number of applicants, while Dr. O'Doherty thought the position at the workhouse was not sufficiently good. "It was not a question of salary. At the Royal Infirmary there was no falling off in applications for appointments in which no salaries were paid." Yet workhouse appointments offer a wide field for useful observation.

Salford Board of Guardians.

At the meeting of the Salford Board of Guardians on May 11th the following resolution was carried: "That the scheme for the building of a new workhouse be abandoned." The mover drew attention to the fact that they would shortly be brought face to face with the provision of cottage homes for children which would involve a large outlay, and further, that when the children were removed from the workhouse there would be room for the adults for many years to come. Cottage homes to accommodate 400 children are to be built at Clifton. They will there have somewhat purer air and brighter surroundings than at the Salford workhouse and to some extent be freer from the workhouse tone and atmosphere, but it is unfortunate that so many children have to be kept together instead of being more widely distributed. They will be taught, it is to be presumed, at their own special schools, where they will meet with none but pauper children and must always suffer from the association. No doubt the

[1] THE LANCET, May 12th, 1900, p. 1382.

difficulty of distributing these workhouse children amongst the non-pauper population is very great; but it is none the less desirable, if the little unfortunates are to have anything like a fair start in life, that their range of experience should not be limited to the pauper class alone and to those who have to deal only with paupers either in the way of teaching or control.

May 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Queen Victoria Jubilee Institute for Nurses.

THE Secretary of State for Scotland has recently made a pronouncement in regard to the spending of public money in the hands of the smaller burghs in Scotland which will be of considerable benefit to that most useful institution, the Queen Victoria Jubilee Institute of Nurses. The smaller burghs in Scotland, while desirous of assisting this scheme, have hitherto been precluded from giving donations out of the moneys in their hands owing to the stringency of the regulations which govern the spending of public money. The Loanhead Commissioners, through their auditor, recently had the following communication on the subject from the Secretary of State:—

I am directed to state that a contribution to the funds of the Queen Victoria Jubilee Institute for Nurses has in several cases and upon certain conditions being satisfied been held by the Secretary for Scotland to constitute a proper application of funds placed at the disposal of local authorities out of proceeds of what is commonly known as the equivalent grant under Section 2 of the Education and Local Taxation Account (Scotland) Act, 1892. I am to add that in order to regularise such a payment application should be made to the Secretary for Scotland for his sanction to the application of the burgh's share of the equivalent grant to such a purpose as a "scheme of public utility" in terms of Section 2 (5) (c) of the Act, there being, so far as he is aware, no statutory power enabling local authorities to make such a grant in any other way.

The treasurer of the Loanhead Commissioners subsequently had, in answer to an inquiry from him, an intimation from the Scottish Office that the Secretary for Scotland was prepared to consider favourably a duly authorised application from the Burgh Commissioners for his sanction to a donation out of the equivalent grant to assist the fund for maintaining a local nurse in connexion with the Queen Victoria Jubilee Institute for Nurses.

May 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dispensary Medical Officers, Question of Vacation.

A MATTER of great interest to dispensary medical officers in Ireland was dealt with on May 10th, when the Queen's Bench Division gave judgment in two cases involving the question of the right of boards of guardians to fix the duration of the annual leave granted to dispensary medical officers. The Lord Chief Baron delivered an elaborate judgment, in which Mr. Justice Johnson and Mr. Justice Boyd concurred, the result of his decision being in favour of the right claimed on behalf of the guardians which heretofore was supposed to have been vested in the Local Government Board. In deciding that each party should pay their own costs the Lord Chief Baron said that as the cases, in fact, involved a contest between two public bodies, the guardians and the Local Government Board, he did not think that it would be fair to give against the individual medical men the costs of the cases. Mr. Justice Johnson remarked that as the guardians had got an important principle decided in their favour they should not ask for costs.

The Meath Hospital and County of Dublin Infirmary.

The annual meeting of the governors of the Meath Hospital took place on May 14th, Sir Gerald Dease filling the chair. The President of the Royal College of Physicians of Ireland (Dr. J. W. Moore) submitted the report of the medical department and alluded to the high rate of mortality which had prevailed among patients suffering from pneumonia, one case in every four having succumbed. Dr. J. Craig, in seconding a motion of thanks to the City of Dublin Corporation and to other public bodies, made a sympathetic allusion to the recent death of Dr. Glasgow Patteson, who had been one of the surgeons of the hospital and who had been instrumental in founding there a bed known as the "Dundalk bed" in connexion with his native town, whence subscriptions has been received for the purpose. It was agreed that this bed should be maintained in the future as a memorial to the late Dr. Patteson.

Letterkenny District Lunatic Asylum.

At the monthly meeting of the governors of Letterkenny Asylum, held on May 10th, the resident medical superintendent, Dr. E. E. Moore, reported that they had an increase of numbers resident at the close of the year. They had 46 more men than there was legitimate accommodation for and only room for nine more women. Taken as a whole the past year had been a remarkably healthy one and the death-rate had been the lowest on record in the asylum since it was opened, being only 5·7 per cent. on the daily average number resident, as against 9 per cent. in 1898. The average rate for the past 10 years was 10·2. The supply of fresh pasteurised milk daily had, Dr. Moore believed, a good deal to do with the sudden fall in the death-rate in the past year, as they had their excellent milk-supply only from December, 1898. If, however, the asylum population continued to increase it would ultimately have a bad effect, he was afraid, on the general health of the inmates.

County Antrim Infirmary.

At the monthly meeting of the Committee of Management of this infirmary, held in Lisburn on May 10th, it was reported that the question of the extern patients had been considered by the Finance Committee, and it was recommended that printed books of orders should be issued to the governors stating that this extern department was only carried on through the goodwill of the surgeon and was not provided by Act of Parliament. The governors should be urged to use discretion as to whom these orders should be given to, so that the surgeon's kindness would not be abused by orders being given to those well able to pay for medical and surgical treatment.

The Infectious Diseases Hospital, Belfast.

At a meeting of the Committee of Management of the Belfast Asylum on May 14th, after a very animated discussion, the following motion was carried: "That the city council having resolved to erect an infectious diseases hospital at Purdysburn on a portion of the asylum estate, this committee expresses its regret at this decision and hopes that the council may yet see its way to alter its intention."

May 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Temperance Measures in the French Army.

THE temperance propaganda is undoubtedly making great strides in France, but the evil is so great and the country produces wine and brandy so freely that it will doubtless be some time before any very obvious effect is apparent. A great step in advance has undoubtedly been taken owing to a circular issued by the Minister of War which attacks the evil in one of its strongest positions—namely, in the army. Every able-bodied man in France has to pass a longer or shorter time in the army where he picks up with ease habits of intemperance which stick to him when he returns to civil life and with which he infects others in his vicinity. The army is therefore responsible in great part for the evil and it is by means of the army that a remedy is now being sought for. There is in every barrack a canteen for the use of privates and non-commissioned officers, kept by a veteran, where men can eat and drink all day at a moderate price. These canteens supply food under fairly hygienic conditions and all provisions have to be passed by the regimental surgeon. Many commanding officers have for some time past been trying to reduce the consumption of alcoholic liquors in the canteens of their districts. Some have forbidden the sale of spirituous liquors except during mealtimes, others have put an absolute veto upon certain drinks, notably upon absinthe, and others again have forbidden the sale of any alcoholic drinks at all. The Minister of War having satisfied himself of the good result of these isolated efforts has put his foot down and General Gallifet has therefore addressed an order to all commanding officers forbidding the sale in any canteen of brandy or other alcoholic liquor, which will include the

thousand-and-one preparations sold under the name of *apéritifs*. The sale of these last has increased in an extraordinary manner of late years thanks to the shameless manner in which the makers advertise their preparations as being very beneficial because carefully prepared, for they argue that the anathemas pronounced against alcohol refer only to cheap common spirit. Some advertisers go so far as to say that the use of their wares will contribute to the public health as being inimical to alcoholism. The circular of the Minister of War spares no words in denouncing this lamentable effrontery, an effrontery which the French press is very chary in attacking, for the trade in these things is a source of considerable revenue to the press on account of the advertisements. The interdict of General Gallifet extends to all canteens, whether in barracks, camps, or districts in which manœuvres take place. The only drinks which may be sold are wholesome hygienic fermented beverages, such as wine, beer, cider, and perry, together with the ordinary beverages like coffee, tea, milk, chocolate, which do not contain alcohol. The Minister of War invites the coöperation of all the generals in taking pains to see that the instructions are strictly carried out. It is most earnestly to be hoped that political influences will not be allowed to nullify this work which has commenced so well, but it must be remembered that in France the liquor interest has a most powerful influence in elections, that is to say, upon deputies and through them upon Ministers. Last year a certain colonel, indignant at seeing his men always drunk when out of barracks, owing to their frequenting the wretched little pothouses which sprout up everywhere in the neighbourhood, made these pothouses out of bounds. The responsible Minister, however, simply on the complaint of the publicans, annulled the colonel's order.

Statistics of the Paris Faculty of Medicine for 1899.

The annual report of the University of Paris has just been published and gives the following interesting notes as to the working of the University. 13,771 students were enrolled—that is to say, 575 less than last year. Among these were 1015 foreigners and 551 women. The part played by the Faculty of Medicine was very considerable. The number of medical students is 4315; in the preceding year it was 4495. This diminution is due to students being struck off the rolls who have failed to comply with certain regulations for five years. This year 160 students were struck off on this account. Among 4112 students studying for the degree of doctor in medicine or the diploma of *officier de santé* there are 3542 French and 570 foreigners. These foreigners include 21 Swiss, 26 Germans, 25 Greeks, 75 Roumanians, and 180 Russians. 24 students are from the Antilles and the Spanish-American Republics have sent 12. 3933 of the students are men and 129 are women; of these latter 100 are foreign—namely, 91 Russian, five Roumanian, two Germans, one Swiss, and one English. The Faculty has distributed 671 diplomas for doctor in medicine; 79 are given to foreigners, 24 of these being Russians and 17 of these again being women. The Faculty also has on its books 43 *officiers de santé*, 48 midwives, and 63 surgeon dentists. The number of candidates having undergone examination was 9118, whereas the year before it was 9429. Out of those examined 1591 failed to pass. Among the resolutions submitted to the Council of the University are the following. The Faculty of Medicine is particularly anxious that two new chairs should be created—namely, of gynæcology and of infantile surgery. By a vote of March 24th, 1899, the Municipal Council of Paris undertook the expense of two chairs and the maintenance of clinical material which these will necessitate. The Faculty of Science asks for the creation of a lecture in mathematics, of a chair in physics, and of another in chemistry, specially applicable for students desiring a certificate in these studies, and for a supplementary course in applied chemistry which will shortly be founded at the expense of the University. The School of Pharmacy numbers 1794 students, of whom nine are women, and last year the school gave 238 diplomas.

The Treatment of Alcoholism.

At the meeting of the Academy of Medicine held on May 8th M. Crivelli reported that in a great number of cases he had seen marked improvement and occasionally lasting cure as a result of the following treatment of alcoholism. He begins with injections of artificial serum, followed by complete rest, baths, massage, a light diet, and coffee to drink. He then administers twice a day a hypodermic injection of a solution of strychnine of the strength of 1 per cent. Commencing with three drops he increases the dose by two drops daily until symptoms of poisoning arise. They generally appear when the dose has been raised to between 20 and 40 drops, corresponding to three or five milligrammes of strychnia. The dose is then gradually reduced until it reaches two drops. M. Fermet said that alcoholism ought to be added to the "causes of death" demanded by the municipal statistics. After some remarks by M. Colin, M. Marey, and M. Vallin this valuable proposition, valuable in the great towns at least, was adopted by the Academy.

May 14th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Canadian Militia Medical Service.

MEDICAL men all over the Dominion have been very much incensed on account of the recall of Major-General Hutton, the officer commanding the Canadian Militia. General Hutton was rapidly putting the Militia Medical Service upon an efficient basis, making it, in fact, something more than a mere name. Friction, however, occurred between himself and the head of the department in the Canadian Government, and as a result the country has lost an efficient and popular officer, and the powers that be at the capital, Ottawa, have come in for a good deal of deservedly adverse criticism, particularly at the hands of the medical men of the country who have a keen conception of the needs of that branch of our militia.

The Crusade against Tuberculosis.

The crusade against tuberculosis is now being pushed with determined zeal in almost every province of Canada. The two leading cities, Montreal and Toronto, have organisations for the propagation of information regarding the prevention and treatment of the disease. The provinces both of Ontario and Quebec have sanitoria which are doing excellent work, the former at Gravenhurst in the Muskoka region, the latter in the Laurentians, about 50 miles from the city of Montreal. The Ontario Government at the session of the local Parliament just prorogued has also participated in the campaign to the extent of enacting legislation which shall empower municipalities to erect and maintain district sanitoria. Financial assistance will be rendered by the Government to each of these and the Government will at once establish a laboratory at the Cravenhurst Sanatorium. Nova Scotia will not be far behind the other provinces in this respect, as her Parliament has authorised the expenditure of $15,000 (about £3000) for the erection of a consumption sanatorium in that province. This province, or rather the city of Halifax, leads the way in some respects, as laws have been enacted prohibiting the act of expectoration in the public streets or in public places or conveyances.

Dominion Registration

Dominion registration is at the present time a live topic in medical politics. Dr. Roddick of Montreal, an ex-president of the British Medical Association, has been charged by the profession in Canada with the perfecting and ultimate completion of this scheme. A draft of the Bill which he is introducing into the Dominion Parliament, of which he is a member, provides for the formation of a Dominion Medical Council, which will not interfere in any way with any of the vested rights of the provincial medical councils. The composition of this Dominion Council is to be as follows: Three representatives are to be appointed from each province (the North-West Territories to rank as a province), which representatives shall be appointed by the Governor-General in Council, one for each province. The second member, one from each provincial medical council, shall be appointed by the medical council of which he is a member. The third shall be *ex officio* the president of the provincial medical council of the province to which he belongs. These are to hold office for four years. The officers of the Council shall consist of an executive committee appointed from its members, a president, a vice-president, a registrar who may act as secretary and treasurer, and such other officers as the Council may deem expedient for it to appoint from time to time. The Council shall be empowered to obtain and possess real estate which at any time shall not exceed the value of $100,000. The examinations shall consist of the matriculating and professional. Any practitioner in Canada who

has been in practice for 10 years may have his name registered on the register of the Council; others desiring to practise in any province of the Dominion of Canada shall be required to qualify by passing the prescribed examinations of the Council. These examinations will be held alternately each year at the cities of Montreal and Toronto until such times as the Council may deem it practical and expedient to hold them in other places. So far there has been very little opposition to this proposed scheme except some of a trifling amount from the profession in the province of Quebec, confined in most part to the French section; and some objection has emanated from Queen's University at Kingston whose members probably fear that the legislation may injure their university. The matter will be thoroughly discussed at the coming meeting of both the Ontario and Canadian Medical Associations, the former on June 6th and 7th, the latter on Sept. 13th, 14th, and 15th, at Ottawa.

Gynæcology among the Insane.

From the annual report of the Inspector of Asylums for Ontario it is gathered that during the past five years 217 patients have been examined gynæcologically and that organic disease has been found in the pelvic organs of 185 of them, only 32 patients out of the whole number examined being absolutely free from any disease of those organs. Of these 185 patients operations have been performed on 171, leaving nine others to be attended to, five cases having been found which were not thought suitable ones for operation. The following is a list of the pathological conditions present, often several in one case: "In 17 cases there was dysmenorrhœa or menorrhagia; in 80, disease of the endometrium; in 91, sub-involution of the uterus; in 36 there were hypertrophied cervices; in 44, lacerated cervices; in 27, cystic cervices; in five there were polypi of the cervix; in 14, uterine fibroids; in one, epithelioma of the uterus; in one, sarcoma of the uterus; in 55, retroversion of the uterus; in six, complete procidentia of the uterus; in 31, ovarian tumour, often with disease of the tubes; in 35 there were perineal injuries with their sequential results; in one there was recto-vaginal fistula; and in one an ischio-rectal fistula, making a total of 444 diseased conditions in 171 cases." In these cases 309 operations were performed. As regards mental health, in 70 cases the patient recovered from her insanity, in 43 other cases there has been improvement, and in 54 of these cases there has been no improvement. During the year ending on Sept. 30th, 1899, 40 of these cases were operated upon. 14 recovered and 14 improved; one died, leaving 11 unimproved so far. Sufficient time, however, has not elapsed to judge whether any out of these 11 unimproved patients will improve or remain as they were before the operation. A closer inspection of the table annexed to the report shows that out of the 14 patients reported as having recovered from their mental aberration 11 were the subjects of acute mania or melancholia, whilst the remaining three were chronic maniacs, in no case of more than five years' standing. Dr. A. T. Hobbs, one of the assistants at the asylum, has had this work specially under his supervision.

The University of Toronto and the Medical Colleges of Ontario.

The relations between the University of Toronto and the medical colleges of the province of Ontario, of which there are five altogether, have been the theme of much discussion for the past three or four months. In 1887 the University took the old Toronto School of Medicine under its wing and from that time it was known as the Medical Department of the University of Toronto, which is the university of the province, as it is to a considerable extent supported by the Government out of the funds of the province. Trinity Medical College, a private corporation, in no way connected with Trinity University, an institution also situated in Toronto, has always felt aggrieved because of the legislation enacted at that time. It claims that the competition between the two schools was thus rendered unfair by the Government creating the medical department of the provincial university. Several years have now elapsed since the agitation for the rectification of this wrong ceased, but it broke out with renewed vigour when Dr. McKay, a well-known member of the local Legislature, introduced a Bill regarding the relations of the medical colleges of the province to the provincial university. This Bill proposes to abolish the medical department of the provincial university as at present constituted and to create a new medical department which shall be composed of the medical teaching faculties of all the colleges; that one member alone should be elected on the senate of the university, and that the examiners should be chosen from each of the teaching faculties. Of course the measure is meeting with determined opposition from the adherents of the present medical faculty of the university, whilst Trinity men believe that they have a just and righteous cause and are working for the adoption of the legislation. It is expected that Trinity University will shortly seek federation with the University of Toronto. If this were accomplished Trinity Medical College would have to send her students up for examination before a rival medical faculty; hence the agitation for the abolition of the present medical department. Recently some of the Trinity men have come forward with a proposition that the two medical colleges should become amalgamated, thus creating a very strong faculty and paving the way for post-graduate work in Toronto. It is expected that during the intermission of the legislature the question will be fully and amply discussed in all its bearings.

Toronto, May 8th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Medical Congresses at Washington.

THIS has been a week of medical meetings at Washington. From May 1st to 3rd the Association of American Physicians held their annual convention. The president of the association was Dr. E. G. Janeway (New York City). Papers were read by Dr. Osler (Baltimore), Dr. Richard C. Cabot (Boston), Dr. A. C. Abbott (Philadelphia), Dr. Andrew H. Smith (New York), Dr. J. N. Danforth (Chicago), Dr. Norman Bridge (Los Angeles), Dr. W. Johnston (Washington), and by other well-known medical men. On the same dates and at the same place was held the triennial meeting of the American Surgical Association, at which papers were presented by surgeons from all parts of the United States. At the same time, and also at Washington, the American Climatological Association held its annual convention, the principal subjects for consideration being the Modern Physician's Duty to his Tuberculous Patients, the Construction and Management of Small Cottage Sanatoria for Consumptives, the Educational and Legislative Control of Tuberculosis, Some Phases of the Tuberculosis Problem in Colorado, and the Blood Changes in High Altitudes and the Relation of Tuberculosis to the Nature of the Soil. Perhaps one of the most interesting contributions was the review of the sanatorium treatment of tuberculosis by the well-known Dr. E. L. Trudeau of Saranac, N.Y. Statistics presented by Dr. Trudeau showed that nearly 40 per cent. of his patients in the early stage of phthisis had been cured by the sanatorium treatment while nearly 40 per cent. had received decided benefit. These results are a splendid endorsement of the value of this mode of treatment when conducted on an intelligent system. On May 1st the malaria question was reviewed at length, and, as might be anticipated, the conclusions arrived at as to the cause of that deadly scourge were in accord with the investigations which British, Italian, and German scientific men have brought to so successful an issue. It should be remembered that an American, Dr. King, was one of the first, if not the first, to point out the probability of the mosquito being an important factor in the origin and spread of malarial fever. The last day of the Physicians' and Surgeons' Congresses was chiefly remarkable for the papers read on Serum-therapy. Dr. John K. Mitchell of Philadelphia read a paper in which he claimed to have succeeded in demonstrating that a mummy which he had been studying had when alive been affected by infantile paralysis. The three days' convention passed off successfully.

Professional Incomes in the United States.

The earnings of professional men in the United States are, as is the case in Great Britain, by no means on the increase, nor are they in most instances commensurate with their skill and ability and the money which has been expended on their education. Unfortunately this down-grade tendency in the incomes of the professions exhibits no signs of abating, but on the other hand the takings of minister, lawyer, and doctor alike would appear to be becoming smaller by degrees and beautifully less. This

deplorable state of affairs is, at any rate among members of the medical profession in this country, almost wholly due to acute competition, while the same remark applies to the members of the legal fraternity. It is said that the ratio of physicians to population is 1 to under 600 in America, and in the British Isles 1 to about 1100. Probably, however, the average income of a medical practitioner is higher on this side of the Atlantic than in Great Britain. The *New York Medical Record*, writing editorially on the subject in its issue of May 5th, says that the average income of a physician in large cities on this continent may be placed at $2000 (£400), in the smaller towns at $1500 (£300), and in the rural districts at $1200 (£240). Compared with the clergyman, however, the American medical man—that is so far as income is concerned—is wealthy. It is estimated that the average stipend of a pastor in large American cities does not exceed $1200 (£240), while in the small towns and the country $800 (£160) is an outside figure. With regard to lawyers' incomes, in *Medicine* for April reference is made to an article which appeared recently in a Chicago paper, which says, "It is doubtful if the average income of lawyers in Chicago is $1500 (£300), but that is because the average is reduced by the large number of failures and of lawyers who scarcely make their board during the early days at the bar." This is true probably throughout the country. Therefore, striking an average of the incomes of American ministers, lawyers, and medical men it would reach little beyond $1100 (£220). Considering that a New York policeman receives about $1500 (£300) it cannot be said that the professional man gets his fair due.

Commission on Tenement Houses in New York City.

The state of the tenement district in New York City has long been a public scandal, and, as I mentioned in one of my former letters, mainly through the instrumentality of the New York Charity Organisation Society a Bill was introduced and passed in the New York State Legislature to empower the Governor to appoint a commission for the purpose of inquiring into the matter in all its bearings. Mr. Roosevelt, the governor, has appointed such a commission, consisting of 15 representative citizens, including architects and builders, lawyers, health officers, and charity organisation workers. The commission have this week begun their work and it appears from the newspaper reports that they have been considerably shocked by the disgracefully insanitary condition of most of the dwellings. It is to be hoped that the commission will reach some practical end and that the result of their labours will not have been in vain, as is too often the case with commissions both here and in Great Britain.

May 5th.

Obituary.

JOHN NEVILLE COLLEY DAVIES-COLLEY, M.A., M.B., M.C. CANTAB., F.R.C.S. ENG.

THE news of the death of Mr. Davies-Colley while still in the prime of life has certainly come to many of his old pupils and to the profession in general as a great shock, though all his friends and personal acquaintances and many of his professional brethren in London have known for some months that it was malignant disease which had caused him to resign his appointments six months ago, and that he had done so in the full knowledge that he was a doomed man.

John Neville Colley Davies-Colley was one of the four sons of Thomas Davies-Colley, M.D., for many years physician to the Chester Infirmary. He was born at Chester in 1843 and was educated privately and at Trinity College, Cambridge. He entered Guy's Hospital as a medical student in 1864, where he was a successful student and at the same time a good athlete. In 1868 he took the Membership of the Royal College of Surgeons of England, becoming in the same year a Bachelor of Medicine of Cambridge University. He was then appointed surgical registrar to the hospital. In 1870 he obtained the Fellowship of his College and was appointed Demonstrator of Anatomy in the Guy's Hospital Medical School. In 1872 he was chosen assistant surgeon in the vacancy left by the retirement of Mr. Edward Cock. This was the beginning of a highly successful career as a hospital surgeon and teacher, for in both capacities he earned the esteem of all with whom he came in contact. As a teacher he was extremely clear and painstaking, his somewhat deliberate methods of imparting instruction being particularly appreciated by his pupils. His slow and cadenced method of speaking, we may add, was adopted as a remedy for a defect of speech which at the outset of his career bade fair to be troublesome to him. He had an obstinate proclivity to stammer, but by taking thought over his manner of elocution he overcame the infirmity. He held in turn the appointments in the medical school of Guy's Hospital of demonstrator of anatomy, demonstrator of practical surgery, lecturer on anatomy, and lecturer on surgery, and in each post he showed himself to be thoroughly master both of his subject and of the best way of imparting his knowledge to others, while his diligence, punctuality, and courtesy formed an excellent example to his pupils.

As a surgeon Mr. Davies-Colley held a very high place in the opinion of all his *confrères*. He was bold in scheme and careful in procedure, while his great industry and fine memory allowed him to carry about with him the result of his experiences to be produced in a moment exactly when and where wanted. He was therefore a tower of strength in consultation, while his operative performance was also of the highest order, as the records of cases which he wrote for our columns and elsewhere very well show. He was not, however, a prolific writer, the articles on Carbuncle, Malignant Pustule, Gonorrheal Rheumatism, and Injuries and Diseases of the Neck, Throat, and Œsophagus, contributed to Heath's "Dictionary of Surgery," and the chapter on Muscles in Morris's "Treatise of Anatomy," with the clinical account of cases to which we have alluded, nearly exhausting his published work, though papers from his pen appear also in the Transactions of the Royal Medical and Chirurgical Society, of the Clinical Society, and of the Pathological Society. But as editor for many years, in conjunction with Dr. Frederick Taylor and later with Dr. Hale White, of the Guy's Hospital Reports, he wrote many papers of great value upon different surgical subjects, wherein he displayed a range of learning and practical knowledge which makes it very sad that he did not live to complete his design of writing a systematic work on surgery. But his book was so far forward when failing health compelled him to give up hope of living to see it issued that we trust we may hear of the intention of one of his colleagues to edit it for publication.

Mr. Davies-Colley was for a long time visiting surgeon to the Seamen's Hospital, Greenwich, to which institution he was consulting surgeon at the time of his death. He was frequently chosen as an examiner, having acted in that capacity for the Royal College of Physicians of London, for the Royal College of Surgeons of England, for the Conjoint Board, and for the University of Cambridge, and in each case he gave the greatest satisfaction to the student—at any rate, to the student who knew his work. Not that he was content to put only simple questions, and especially not that he was satisfied with slipshod answers, but because he was always so perfectly clear that the examinee knew what he was being asked. In short, Mr. Davies-Colley's experience as a teacher was so thorough that he could appreciate the particular difficulty of *viva voce* tests; while he did not, as too many examiners do, consider that a clearly enunciated question is necessarily a question the drift of which is clear. He was polite, quiet, and deliberate, and the man who knew his work felt that he had a judge to deal with upon whose appreciation of the evidence he could rely, and between whom and himself no misunderstanding would lead to an undeserved rejection.

With such qualities as surgeon and teacher it is no matter of surprise that Mr. Davies-Colley enjoyed the highest measure of esteem among all his colleagues and pupils, senior and junior, at Guy's Hospital. When the cause of the sudden resignation of his appointment last Christmas was understood to be malignant disease of the liver from which there could be only one method of release, the feeling of all connected with Guy's Hospital—a feeling which was shared by many outside its walls who were privileged to know Mr. Davies-Colley in different capacities—was one of real grief that so good and useful a life should thus be condemned. The past and present students of Guy's gave effect to their feeling when, only some few days before Mr. Davies-Colley's death they presented him with an

illuminated address bearing 600 signatures and conveying, as they worded it—

"Our heartfelt admiration for your long and invaluable work amongst us both as a surgeon and a teacher, to express our gratitude for the example which you have so constantly set us of devotion to duty, sterling honesty of purpose, uprightness, and integrity. Finally, we would affectionately assure you that the breaking of the official ties which bound you to us has occasioned the deepest personal sorrow and regret."

To this address Mr. Davies-Colley returned the following touching reply:—

"My dear friends of Guy's Hospital, Colleagues, Past and Present Students,—I thank you all for the splendid memorial and far too flattering appreciation of my services in the school and wards of the hospital which I have just received from you. It has been a very great grief to me to leave you all so suddenly. But if anything could relieve that grief it is the reflection that the efforts which I have made to do my duty among you have met with so cordial a recognition upon your part. I desire also to express my admiration for the beauty of the design and its artistic decoration. I have no doubt that the book will be kept as an heirloom and most prized possession by the members of my family. And now it remains for me to say farewell to all. May God's blessing rest upon you and upon the dear old school and hospital. With feelings of the deepest love and affection for you all,

"I remain, most gratefully yours,

"N. DAVIES-COLLEY.

"Borough, Pulborough, May 4th, 1900."

And on May 6th he died at Pulborough, where he was buried.

Mr. Davies-Colley became a member of the Council of the Royal College of Surgeons of England in 1896. He married a daughter of the late Mr. Thomas Turner, for some time Treasurer of Guy's Hospital, and sister of the late Dr. Charlewood Turner, Physician to the London Hospital, by whom he leaves both sons and daughters to deplore his premature death.

Medical News.

PRESENTATIONS TO MEDICAL MEN.—Mr. E. S. Forde, L.R.C.P., L.R.C.S. Edin., of Dalry, Galloway, having been approved by the War Office to be sent to Bloemfontein, South Africa, his friends in Carsphairn and Dalry have presented him with a substantial token of esteem and appreciation of his services over the wide district of his practice.—The members of the ambulance classes of the city police teams, Wakefield, have presented Mr. W. K. Clayton, M.D. Brux., L.R.C.P., L.R.C.S. Edin., their lecturer on first aid, with a silver cigarette case, and the members of the Young Men's Christian Association Class have given him a photographic group of the class in a frame.—On April 27th Mr. H. M. Robertson, M.B., C.M. Glasg., of Brechin, was the recipient of several testimonials on the occasion of his leaving that city. For the last six years he has practised there and during that period has made many friends. The presentations consisted of an illuminated address, a purse of sovereigns, and a gold bracelet for Mrs. Robertson, subscribed for by the inhabitants of Brechin and the Ancient Shepherds. At the same time he received the "emblem of merit" from the Maisondieu Lodge of Shepherds.—On May 9th Mr. Lemuel Matthew Griffiths, L.R.C.P. Edin., M.R.C.S. Eng., upon his resignation of the assistant editorship of the *Bristol Medico-Chirurgical Journal*, which he had held for 17 years, was presented by the members of the Bristol Medico-Chirurgical Society, under whose auspices the journal is issued, with an illuminated framed address, a silver bowl, the 20-volume "International Library of Famous Literature," a book-plate, and a cheque for the balance of an amount of £135 16*s.* which had been subscribed.—At a largely attended meeting of the parishioners of Westbury-on-Trym, held on May 2nd in the schoolroom under the presidency of the Rev. J. J. D. Cooke, M.A., Mr. Henry Lawrence Ormerod, M.D., B.Ch. R.U. Irel., L.R.C.P. Lond., M.R.C.S. Eng., was presented with a solid silver bowl and a revolving silver breakfast dish together with an album containing the names of more than 300 subscribers, as a mark of respect and esteem on the occasion of his marriage. The chairman in making the presentation spoke of the valuable services which Mr. Henry Ormerod, sen., M.R.C.S. Eng., had rendered to Westbury for the past 50 years. The Shepherds' Friendly Society have also presented Dr. H. L. Ormerod with a silver salver.

At the recent annual meeting of the subscribers and friends of the Ashby-de-la-Zouch Cottage Hospital the Earl of Loudoun was elected President. The report showed that 78 patients were treated at the institution during the year, the cost of maintenance being £13 13*s.* 4*d.* per head.

SUPERANNUATION ALLOWANCE.—Mr. Edward Swain, L.R.C.P. Edin., M.R.C.S. Eng., medical superintendent of the Three Counties Asylum, Arlesey, Hitchin, Herts, has been awarded a superannuation grant of £500 per annum.

IN MEMORIAM.—To commemorate the deep interest which the late Mr. T. H. Ismay of Birkenhead took in the Bootle Hospital, and as an acknowledgment of his donation of £1000 to the endowment fund, the committee of that institution have decided that one of the wards in the new wing shall be named after him the "Thomas Henry Ismay" ward.

WESTON-SUPER-MARE.—The annual meeting of friends of the Children's Convalescent Home at Weston-super-Mare, which is in connexion with the Bristol Children's Hospital, was held on May 7th. The report stated that 272 children had been admitted during the year. The financial statement showed that the total expenditure was under £500 and that there was a deficit balance of £64, which, therefore, had to be debited to the Bristol Children's Hospital account.

NOTIFICATION OF PHTHISIS.—The committee of the Devon and Cornwall Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis have approached the Sanitary Committee of the Plymouth Borough Council with the suggestion that the disease should be made voluntarily notifiable. It was pointed out that in 1898 consumption caused 134 and other forms of tuberculosis 70 deaths in the town. Voluntary notification of the disease would lead to dissemination of information respecting the precautions to be taken for preventing its spread and have a valuable educational influence. It was suggested that a fee should be paid to medical practitioners for the notification of cases and that the information, although acted upon as fully as possible by the sanitary authorities, should be treated as confidential.

ASYLUM WORKERS' ASSOCIATION.—At the annual meeting of the association held on May 14th Sir James Crichton Browne, in moving the adoption of the report, laid stress on the importance, from the point of view of the public who desire to secure the best possible attendance upon their insane relatives, of asylum workers having before them a definite permanent career with the prospect of a pension when unfit for further service. The same view was urged by Dr. Sidney Coupland, one of the Commissioners in Lunacy, who seconded the adoption of the report, and also by Mr. Hayes Newington, who proposed a vote of thanks to the honorary secretary. Amongst the other speakers were Mr. Robert Jones of Claybury; Dr. Harding, superintendent of the Northampton County Asylum; Dr. Elkins, superintendent of the Leavesden Asylum; and Dr. Outterson Wood. The annual report for 1899 showed that the roll of members had increased from 2890 in December, 1898, to 3006 at the end of 1899, this number including 61 life members and 37 associate members. Representatives of 31 asylums (in England, Wales, Scotland, Ireland, and the colonies) not previously represented had joined the association during 1899, and recently members had been elected from the Royal Edinburgh and Royal Glasgow Asylums. Reservists on active service had been retained on the roll without payment of subscription for the present year. The financial statement showed that the aggregate receipts for 1899 amounted to £256 10*s.*, as compared with £254 7*s.* 9*d.* during 1898. The credit balance at the end of 1899 amounted to £143 2*s.* 4*d.*, against £137 14*s.* 3*d.* at the end of 1898. Nine cases had received grants from the Home of Rest Fund, which was assuming much of the character of a mutual benefit society, being mainly supported by asylum workers themselves, though contributions from others were welcome. Impending lunacy legislation had engaged the anxious attention of the executive and every effort had been made to obtain the introduction of a clause providing for assured pensions for asylum workers.

CARDIFF INFIRMARY.—At a meeting of the Management Committee of the Cardiff Infirmary held on May 9th it was decided to appoint two ophthalmic surgeons and one assistant ophthalmic surgeon. It was stated that only one application had been received for the post of assistant house surgeon to the institution.

PASSION PLAY AT OBERAMMERGAU.—In connection with the Oberammergau Passion Play, the first representation of which will take place on May 20th and the last on Sept. 30th, the Great Eastern Railway Company have arranged inexpensive return tickets to Munich. Passengers can travel either viâ the Hook of Holland and Cologne, or viâ Antwerp and Cologne. For tourists combining a visit to Oberammergau with the Bavarian Highlands and the finer districts of the Austrian Tyrol the company have also arranged a series of combination tickets for cheap circular tours (Rundreise system) viâ the Hook of Holland, including Oberau, the station for Oberammergau.

EQUITABLE LIFE ASSURANCE SOCIETY.—The annual report of the Equitable Life Assurance Society for the year ending Dec. 31st, 1899, shows that during that period 299 new policies were issued assuring the sum of £378,315, of which £27,000 was reassured, leaving the net amount at risk £352,315. The net new premiums received amounted to £12,861, which included £1468 single premiums. 36 immediate annuities assuring the payment of £2263 per annum were granted for the consideration of £29,436. Claims arose under 101 policies in respect of 72 deaths. The original sums assured by these policies amounted to £110,700 and the bonus additions attaching at the time of death amounted to £124 294. In several cases bonuses which had been declared, amounting in the aggregate to £11,000, had been surrendered either for cash or reduction of premiums, so that the total additions which had been declared on these policies amounted to £135,295. On the average, therefore, every £1000 of assurance which became a claim last year had been increased by additions to £2222. In one case the sum assured and declared bonuses exceeded four times the original amount assured; this was policy No. 292, dated in 1817, for £1300, and on its becoming a claim £6363 was paid, the total premiums paid being £2003. The funds of the society were increased by the sum of £174,651 and at the end of the year amounted to £4,681,087. The with-profit policies in force on Dec. 31st last numbered 5064, assuring £5,562,075.

QUEEN'S COLLEGE, BELFAST.—At the class examinations held at the close of the medical session in the above college the following prizes were awarded:—Zoology: William James Wilson, George Henry Waugh, Robert James Spence, John Stevenson O'Neill, Christopher Armstrong, and Malcolm Orr Wilson (equal). Chemistry: Senior—William Hawthorne. Junior—Robert James Spence and William James Wilson. Practical Chemistry: Senior—William Hawthorne. Junior—George Henry Waugh, Samuel Kirkpatrick Adams, and Thomas Lyle. Chemical Laboratory: Joseph Harold Totton. Anatomy: Senior—Robert James Bethune, Henry Mulrea Johnston, Samuel Robert Hunter, B.A., and William Henry Norman Bright. Junior—Ernest Clements and Thomas Lyle (equal), and Samuel Kirkpatrick Adams. Practical Anatomy: Third year—Sydney Herbert George Blakely, Walter Phillips, B.A., and Samuel Robert Hunter, B.A. Second year—Mary Evelyn Simms and Thomas Henry Suffern. First year—Joseph Clarke M'Pherson, Thomas Lyle, and Samuel Kirkpatrick Adams. Physiology and Histology: Senior—Thomas Carnwath and Henry Mulrea Johnston (equal), and John M'Clatchey and Walter Phillips, B.A. (equal). Junior—Thomas Lyle, Joseph Clarke M'Pherson, Edward Fitzgerald, and James M'Alister Holmes (equal). Practical Physiology: Thomas Carnwath, Henry Mulrea Johnston, Thomas Killen, Samuel Thompson Irwin, and John M'Clatchey (equal). Practical Histology: Samuel Beattie Wylie Moore, Joseph Henry Thompson, Foster Coates, and John M'Clatchey. Medicine: William Burns, David M'Mordie, B.A., and John Armstrong. (John Beatty Logan, non-matriculated.) Surgery: Senior—John Hope Reford, B.A., Marion Braidfoot Andrews, and Prudence Elizabeth Gaffikin (non-matriculated) (equal). Junior—John Knox and Henry Murray Agnew. Materia Medica: James Macarthur and John Hargreaves Robinson. Midwifery, Gynæcology, and Diseases of Children: Archibald George Heron, B.A., William Rodgers, M.A., David M'Mordie, B.A., and William John Brereton Fergus (equal), and John Armstrong and John Stewart Ferguson Weir. Ophthalmology and Otology: Archibald George Heron, Marion Braidfoot Andrews, and John Arthur Mills, B.A. (equal). Sanitary Science: William Rodgers, M.A.

MEDICAL MAGISTRATES.—Mr. Francis W. Grant, M.D. Edin., of Elgin, and Mr. James A. Cameron, M.D. Edin., of Firhall, Nairn, have been appointed justices of the peace for Morayshire by the Lord Chancellor upon the recommendation of the Duke of Fife, Lord Lieutenant of the county of Elgin.

HEALTH OF THE RHONDDA DISTRICT.—Mr. H. Jones, in his annual report, which was presented at the last meeting of the Rhondda Urban District Council, states that during 1899 the birth-rate was 33·1 per 1000, which was below the average rate of the previous 10 years (37·4 per 1000). The death-rate was 19·6 per 1000, higher than the average of the past 10 years by 0·7 per 1000. The death-rate of children under one year was higher than recorded in any previous year, being equal to 248 per 1000 births, and was only exceeded in two of the great towns (Burnley and Preston). The deaths from zymotic diseases numbered 2807 (against 1730 in 1898) and were divided as follows: scarlet fever, 534; typhoid fever, 362; puerperal fever, 23; diphtheria, 1804; erysipelas, 61; and continued fever, 23. The zymotic death-rate was 3·9 per 1000, a rate of 1·2 above the average of the last 10 years in the Rhondda district—nearly double that of the whole country, and exceeded in only three of the 33 large towns.

UNIVERSITY OF CAMBRIDGE.—A class in practical histology will be held during the long vacation by the Master of Downing (Dr. A. Hill) and Dr. E. Barclay Smith, beginning on July 7th. A benefaction of over £13,000 has been offered to the University by the trustees of Miss R. F. Squire. Plans for anew building, which will be opposite the new Medical School and Humphry Museum, have been prepared by Mr. T. G. Jackson, R.A., and are exhibited in the Royal Academy with Mr. Prior's plans for the Medical School. The first and second examinations for the M.B. and B.C. degrees begin on June 11th. The council propose that for candidates who have not already passed the second examination the fee for either part of the third examination shall be raised from two to three guineas. This increase will in some measure provide for the additional subsidy to be paid to the hospital by the University.—At the Congregation on May 10th the following were admitted to the degree of Bachelor in Surgery: J. H. Philbrick, B.A., Trinity; H. N. Matthews, B.A., St. John's; H. P. Bradley, B.A., Caius; T. E. Holmes, B.A., Caius; and J. Gutch, M.A., Christ's.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, MAY 10TH.

Conditions of Hospital Admission.

Mr. PICKERSGILL asked the Attorney-General whether his attention had been called to the fact that on Saturday, April 21st, Miss A. J. Beatty upon her application for medical treatment at King's College Hospital was refused admission; and whether the authorities of this public institution were bound to afford relief to suitable applicants for medical treatment without discrimination.—The ATTORNEY-GENERAL (Sir Robert Finlay) replied: It is, I believe, the fact that Miss Beatty was refused admission at King's College Hospital. As far as I know, there is no legal obligation on such institutions to admit any particular individual.

Anti-typhoid Inoculation.

Mr. WYNDHAM, in reply to questions on this subject, said that the statistics at present available were not sufficient for forming a conclusive opinion. Only those men were inoculated who volunteered to submit to the operation, and according to returns at present received about 20 per cent. volunteered either before embarkation or during the voyage out; it was not considered advisable to inoculate them after landing in South Africa, as the operation might cause delay in their movements. Statistics had been called for from every station at home and abroad and a special report regarding the garrison at Ladysmith.

Hospital Attendants at Netley.

Mr. MACNEILL asked the Under Secretary of State for War whether 28 out of the non-commissioned officers and men who had been invalided home from Africa owing to illness contracted or wounds sustained in the campaign, subsequently to their examination by the principal medical officer at Netley applied at the Assistant Adjutant-General's office for furlough but received refusals to their application on the ground that their services were required for duty at Netley; why out of the 6000 men who had been invalided home from the front should an exception

be made in the case of these men to the practice of permitting men invalided from the war to go on furlough; and whether, having regard to the disappointment to the invalided soldiers and their friends entailed by this refusal of furlough, the War Office authorities would reconsider their decision in this matter.—Mr. WYNDHAM replied: Furloughs have, as the hon. Member points out, been very freely granted, but a certain number of men are necessarily detained at Netley to perform the duty of attendants at the hospital. The selection of these men rests with the general commanding the district and he will no doubt take care that the duty shall not press inequitably upon any individuals.

Lead Poisoning.

On the motion of Mr. COGHILL there was ordered a return of the number of cases of lead poisoning which had been reported as occurring (1) in the earthenware and china industry for each month from January, 1898, to March, 1900, both inclusive; and (2) in all other trades.

The Midwives Bill.

The motion proposed by the Government authorising the payment out of moneys to be provided by Parliament of such expenses as the Treasury might certify to have been necessarily incurred by the General Medical Council under the provisions of the Midwives Bill was at this sitting of the House withdrawn without any comment being made on behalf of the Government or by any Member of the House. The motion was discussed on one occasion and from time to time afterwards postponed.

FRIDAY, MAY 11TH.

Lead Poisoning.

Mr. COGHILL asked the Home Secretary whether there was a diminution in the cases of lead poisoning in the pottery trade for the 12 months of 1899, as compared with 1898 and 1897; whether there had been a diminution in the cases of plumbism occurring in the pottery industry since the introduction of the new special rules in 1898; whether information in the possession of the Home Secretary showed that the rule requiring the monthly examination by the certifying surgeon of women and young persons had had a beneficial influence in diminishing the cases of plumbism; and whether the examination by a qualified medical man of all workers, whether adult male, women, or young persons, working in the processes connected with lead, was urged upon the Home Office by the china and earthenware manufacturers some years previously to May, 1898.—Sir MATTHEW WHITE RIDLEY replied: There is a striking diminution in the number of cases of lead poisoning in the pottery trade in 1899 as compared with 1898 and 1897, and as will be shown by the return which at the instance of the hon. Member was ordered yesterday, laid on the table in dummy to-day, and will be in the hands of Members within a few days, the diminution follows closely on the establishment of the new rules in 1898. There is also, I think, evidence that the rule requiring the monthly medical examination has contributed materially to this result. As regards the last paragraph of the question I find no official record of the medical examination of all workers having been suggested by the manufacturers before 1898, but I understand that in 1895, when the Factory Bill of my predecessor was before the House, they urged the proposal on their local Members; and I may at all events say that I had the co-operation of the majority of them in establishing the medical examination required by the rules of 1898, and that I look forward with confidence to having their co-operation in any extension of it which may be shown to me to be called for.—Mr. COGHILL asked the Home Secretary what steps he proposed to take to control the importation of, or to exclude, the china and earthenware manufactured abroad in countries when there was no restriction as to the use of materials, and where there was no legislative protection for the workers in practical operation.—Sir MATTHEW WHITE RIDLEY replied: Any steps in the direction indicated by my hon. friend could not logically stop at china and earthenware, and the question of controlling or prohibiting the importation of articles manufactured in foreign countries where the workers may not enjoy the same statutory protection as those engaged in similar trades in England is a very large one, and I do not see my way to embarking upon it. I may add that it is a matter in which I have no direct powers.

New Hospital at Hong-Kong.

General LAURIE asked the Under Secretary of State for War whether any, and if so what, steps were being taken to provide a hospital at Hong-Kong in a suitable locality to replace the present undesirably situated building where the European soldiers were now treated. Mr. WYNDHAM replied: Yes, sir, the site for the new hospital has been approved and the ground has been prepared for building. The plans are complete and are going out this month. Every effort will be made to erect the building as soon as possible.

TUESDAY, MAY 15TH.

Anti-typhoid Serum for the Navy.

Mr. BROWN asked the Junior Lord of the Admiralty whether the Army Medical Department reports show that inoculation for enteric fever had been found useful in our army in South Africa; and, if so, whether the Government would supply anti-typhoid serum to Her Majesty's ships so that sailors and others who had to land in unhealthy places might previously be inoculated on board ship.—Mr. AUSTEN CHAMBERLAIN: This matter is receiving careful attention, but definite information as to the results of inoculation for enteric fever is not yet available. When this information is received the point raised by my hon. friend shall be considered.

PRESERVATIVES AND COLOURING MATTERS IN FOOD.

The Departmental Inquiry.

MONDAY, MAY 14TH.

The Committee appointed by the Local Government Board to inquire into the use of preservatives and colouring matters in food met again to-day with Sir Herbert Maxwell, M.P., in the chair, and proceeded with the examination of witnesses.

Dr. VIVIAN POORE, physician to University College Hospital, was the first witness examined, and in reply to the CHAIRMAN he said that as a practising physician he had given some attention to the effects of chemical preservatives upon food, and the conclusion he had come to was that no preservative should be allowed to be added to food unless the nature of it and the quantity added were fully stated. He thought that besides the positive harmfulness of certain preservatives the negative side of the question was most important and there ought to be no risk of mistaking preserved food for fresh food, and that the want of fresh food could not but have a very harmful effect upon the health of the community, notably of children. It was impossible to say precisely what was the effect of these chemical preservatives; indeed, what he desired to do was to make a plea for our ignorance in this matter. Scurvy was a thing about which we were very ignorant. All we knew was that when a community was kept with an absence of fresh food for a long time scurvy resulted and the general level of health fell. No chemist and no physiologist had yet given us a satisfactory explanation of the cause of scurvy. It was thought at one time that the salt was the cause, but that idea had been exploded. It was suggested at one time that if the stock fish—fish simply dried—were substituted for salted fish the sailors would escape scurvy, but that again failed. It was a fact, he believed, that a child at the breast had never been known to contract scurvy. He certainly drew a distinction between vegetables preserved aseptically and hermetically and vegetables preserved by chemicals. No doubt it was a popular belief that bottled vegetables prevented scurvy, but he thought Nansen had found them fail, that these vegetables had not the anti-scorbutic power of the really fresh vegetables. If a preservative were added to milk which perhaps was tasteless there was not only the harm of the preservative but the milk very soon ceased to be fresh. The milk which was drawn by a sucking animal from the breast of its mother had never been exposed to the air, its temperature had never been lowered, and the constituent parts had never been allowed to separate, and, indeed, they must look upon it as quite a different thing from milk which had been artificially cooled, exposed to the air, and allowed to separate into its constituent elements. Children fed from the breast never manifested a rickety condition. As he said, he was making a plea for their ignorance. He asked that their Committee should not go ahead of the facts. There ought to be no confusion between fresh food and stale. He would go so far as to put frozen meat in the category of meat which was no longer fresh. He of course admitted that it was a distinct advantage to keep milk from becoming putrid, but he pleaded that there was another side of the question: the milk which had been heated and churned and put through tubes could not be regarded as the same as milk drawn by the offspring direct from the mother. He would call for a declaration as to pasteurisation just as he would call for a declaration of the presence of chemical preservatives. The artificial colouring of food was a thing which, in his opinion, should not be encouraged.

By Dr. BULSTRODE: He quite admitted that preserved food must always have a place in all dietaries, and if urban communities were becoming more and more dependent upon preserved food then he submitted it was very essential that they should know where they could get fresh food.

Sir THOMAS LAUDER BRUNTON, examined by the CHAIRMAN, said that he appeared before the Committee on behalf of the Royal College of Physicians of London. His general conclusions on the subject of preservatives in food were that it was almost impossible to prevent their use, but that they should be strictly regulated, that if they did not use preservatives they ran the risk of causing injury by food which was decomposing, but, on the other hand, if they used preservatives in too large quantity they might do harm through the preservatives themselves. Moreover, it seemed to him that by the unregulated use of preservatives they might possibly get a double danger from the drug itself which was used as a preservative and from the decomposing food which might, in spite of the addition of a certain quantity of preservative, still undergo change and become dangerous to health. He was of opinion that the milk-supply of a large town could be carried on without the use of preservatives and that it was desirable that it should be so carried on. No doubt there was a danger of the use of preservatives leading to milk-vendors dispensing with precautions for cleanliness. Asked whether he had formed an opinion as to the relative harmlessness of the different chemical preservatives witness said he had formed an opinion, but the data upon which he had formed it were so imperfect that he should prefer not to express any opinion. He thought that more data were required before an opinion of permanent value could be formed. They were able to form opinions regarding the action of certain drugs from their administration either to animals or men, but the length of time over which such experiments extended was too short to allow of a complete opinion being formed in regard to their action. When he spoke of action he meant cumulative and possibly something more than cumulative—that was to say, the continued action over a length of time even though there should be no accumulation. If a man took a little excess of sulphate of magnesia every morning so as to cause rather too free purgation there was no accumulation in the body of the sulphate of magnesia, but yet at the end of a year the continued excessive use of the drug had given rise to a condition of weakness which would not have been present but for the excessive use of the drug. He thus distinguished between a cumulative effect and a continued effect. The amount of boric acid which could be got rid of by the human system in 24 hours was limited, but he did not know the limit. It would at least be difficult to know whether any accumulation was going on, and with the present data before them it would be impossible to say whether continuous, as distinguished from cumulative, effect was being produced. He should recommend, as the Select Committee of the House of Commons on Food Adulteration had recommended, that an authority be constituted to act as a court of reference upon scientific and other questions arising under the Food and Drugs Acts and that this authority be empowered to prescribe standard and limits for food. The data before such an authority would be imperfect and in order to get proper data he thought it would be necessary to insist upon the presence, nature, and proportion of the preservative in each article of food being notified by label or otherwise. By such notification, in the case of any symptoms arising in a consumer, it would at once be possible to ascertain what amount of any given preservative he had been taking in the course of a day and over what period of time the consumption had extended. By then comparing a number of such cases one would be able to make out definitely what effect had been produced by any given preservative in given quantity in consumers of a certain age, sex, and strength. He would certainly give a purchaser the option of purchasing fresh or preserved food. With regard to the recommendation of the Select Committee on Food Adulteration

he thought that as the proposed board would have to do much more with questions of pharmacology, medicine, and public health than with chemistry, the medical profession was insufficiently represented upon it. He thought that the Royal College of Physicians in particular, as being one of the most important public bodies in medicine, should be represented upon the Board.

By Professor THORPE: No doubt this Board was originally suggested by analysts with a view to prescribe limits with respect to what should determine adulteration in certain articles of food and to prescribe also methods of analysis, but while he had enlarged its scope he had not changed its character. It would be necessary to have analysts upon the Board who were thoroughly competent to understand chemistry, but it would also be necessary to have someone who understood, not only chemistry, but the working of the proposed preservative upon the human body. The first object would be to get definite information and the next to act upon it: at present they lacked the definite information. He should be inclined, if possible, to carry on the milk trade without the use of preservatives. He thought it could be done if methods of cooling even in small shops and of sterilising were made compulsory, but here also his information was to a certain extent defective. He did not know how far it would be possible to carry on the sale of milk in the very poor districts of London without the addition of preservatives and whether by insisting upon the absence of preservatives entirely in milk one might not drive people to the use of preserved milk instead of milk from the cow. As to the use of sterilised milk being injurious to children they had not sufficient data to form a definite opinion. He had heard it stated that sterilised milk was exceedingly injurious to children. For his own part he did not think it was: the only thing he could say was that sterilised and boiled milk as a rule was not relished by children as fresh milk was relished. He knew of no chemical change in the milk which would render it injurious to children. He need not, however, say that very slight changes in albuminous material, such as no chemist could detect, might convert innocuous substances into a deadly poison, and between deadly poisons and their antidotes no chemist could detect the difference.

By Dr. BULSTRODE: In the administration of certain of these preservatives there was a possible danger, but he did not know how far it might be a certain danger.

By Dr. TUNNICLIFFE: A minute quantity of copper in food was innocuous, but the principle of having anything of the kind in food without a declaration of its presence was in his opinion most objectionable.

Mr. FREDERICK WOMACK, lecturer on physics at St. Bartholomew's Hospital, was the next witness, and in the course of his examination he said that he knew a few instances in which preservatives in milk had caused some little derangement. He cited a case where a comparatively small quantity of boric acid had caused digestive interference of considerable degree. Although he had not a very strong opinion on the subject he thought it would be desirable to have regulations governing the use of all chemical preservatives. From letters which he had received from members of the staff of St. Bartholomew's Hospital he gathered that generally they were hostile to the use of preservatives.

Professor W. D. HALLIBURTON, professor of physiology in King's College, said that he appeared before the Committee at the request of the Royal College of Surgeons of England. On general principles one would object to the use or the continued use of antiseptics, for a substance which would destroy the life of micro-organisms could not be expected to be beneficial to the life of a higher organism. In such a simple process as that of cooking there were some disadvantages, as was seen in the case of a hard-boiled egg. On the whole, he thought that if it were possible it would be better to prohibit the admixture of foreign substances with food and to substitute a system of cold storage and transport, but if the Committee did not see their way to prohibit the use of antiseptic materials he would suggest that they should require a declaration of their presence.

The Committee then adjourned.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BAILEY, REGINALD THRELFALL, M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to the Liverpool Royal Infirmary.

BATTEN, F. E., M.D., M.R.C.P. Lond., has been appointed Assistant Physician to the National Hospital for the Paralysed and Epileptic, Bloomsbury.

BAXTER, S. E., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Civil Parishes of Irchester, Wollaston, Great Doddington, Strixton, Bozeat, and Eastern Maudit in Wellingborough Rural District, Northamptonshire.

BEVAN, T. W., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Nantyglo and Blaina Urban District in the County of Monmouth.

BUCKLEY, T. W., M.D., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Thrapstone District.

BURKE, P. J., M.B., B.S. Irel., has been appointed Junior Resident Medical Officer for the Withington Workhouse by the Chorlton Board of Guardians.

BUZZARD, THOMAS, M.D., F.R.C.P. Lond., has been appointed Consulting Physician to the National Hospital for the Paralysed and Epileptic, Bloomsbury.

CAMPBELL, J. M., M.B., C.M. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Pollokshaws District in the County of Renfrew.

CHRISTIE, B. R. CRAIG, M.B., C.M. Edin., has been appointed Resident House Surgeon to the Glasgow Royal Infirmary.

CLARKE, H. R., M.B., Ch.B. Vict., has been appointed Junior House Surgeon to the Infirmary and Dispensary, Bolton.

DALLEY, W. C., M.R.C.S., has been appointed Medical Officer for the Gyston Sanitary District of the Loughborough Union.

DATTA, KRISTINALAL, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Senior Medical Officer to the Ferndale Colliery Workmen, South Wales.

DAVISON, L. S., M.B., B.S. Durh., has been appointed by the War Office a Volunteer Medical Officer for the front, South Africa.

DUNAHER, E. H. J., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Rainham District.

DYKES, C. R., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Evercreech Sanitary District of the Shepton Mallet Union, vice J. H. Hyatt, resigned.

FERRIER, DAVID, M.D., F.R.C.P. Lond., F.R.S., has been appointed Physician to the National Hospital for the Paralysed and Epileptic, Bloomsbury.

GARSON, W. R. J., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Bebington District, comprising the Urban Districts of Higher Bebington, Lower Bebington, and Bromborough, and the Townships of Brimstage, Eastham, Storeton, Poulton-cum-Spittle, in Wirral Rural District.

HARRIS, JOHN HENRY, M.R.C.S., L.S.A., D.P.H. Cantab., has been appointed Medical Officer of Health for Dartmouth, and also Medical Officer for the Dartmouth and Totnes Port Sanitary District, vice R. W. Soper, deceased.

HAWTHORNE, C. O., M.D., M.R.C.P., has been appointed Assistant Physician to the Royal Hospital for Children and Women, Waterloo Bridge-road, London.

HAYMAN, HOWARD, L.D.S. (R.C.S., Eng.), has been appointed Honorary Dentist to the Jubilee Convalescent Home, Clifton, Bristol.

HAYS, A. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Woodford District.

HENNESSY, D., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Bandon, Kilbrogan, and Brinny Electoral Divisions in the County of Cork.

HOYLE, F., M.B., Ch.B. Vict., has been appointed Senior Resident Medical Officer for the Withington Workhouse by the Chorlton Board of Guardians.

JACKSON, J. HUGHLINGS, M.D., F.R.C.P. Lond., F.R.S., has been appointed Consulting Physician to the National Hospital for the Paralysed and Epileptic, Bloomsbury.

KINSELLA, J. I., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Rdenderry Poor-law Union, King's County.

MCCALL, J. M., M.B., M.S. Glasg., M.R.C.V.S., has been appointed Assistant Veterinary Officer to the Board of Agriculture, vice W. Duguid, deceased.

ORMEROD, J. A., M.D., F.R.C.P. Lond., has been appointed Physician to the National Hospital for the Paralysed and Epileptic, Bloomsbury.

OWEN, R., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Llandwrog Sanitary District of the Carnarvon Union, vice J. T. Griffiths, resigned.

POTTER, E. FURNISS, M.D., has been appointed to the Senior Staff of the London Throat Hospital.

ROBBS, CHARLES H. D., B.A. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to the Royal Free Hospital, Gray's Inn-road.

ROSSER, J. S., M.D. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Llandovery District.

RUSSELL, J. RISIEN, M.D., F.R.C.P. Lond., has been appointed Physician to the Out-patient Department of the National Hospital for the Paralysed and Epileptic, Bloomsbury.

SCOTT, KENNETH, F.R.C.S. Edin., has been appointed Ophthalmic Surgeon to the St. Mary's Children's Hospital, Plaistow, E.

STRETTON, J. L., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Referee under the Workmen's Compensation Act, 1897, for the Kidderminster Division of County Court Circuit No. 23, to act for the whole circuit.

TAYLOR, JAMES, M.D., F.R.C.P. Lond., has been appointed Physician to the Out-patient Department of the National Hospital for the Paralysed and Epileptic, Bloomsbury.

TINDAL, ANDREW STEWART, M.D., has been appointed an Assistant Physician to the Victoria Infirmary, Glasgow.

TUNNICLIFFE, F. W., M.D. Lond., M.R.C.P., has been appointed to the Chair of Materia Medica and Pharmacology in King's College, London.

TURNER, W. A., M.D., F.R.C.P. Lond., has been appointed Assistant Physician to the National Hospital for the Paralysed and Epileptic, Bloomsbury.

TURTON, E., M.B., Ch.B. Vict., L.R.C.P. Lond., M.R.C.S., has been appointed Regimental Surgeon to the 2nd Norfolks at Glen Camp, north of Bloemfontein, South Africa.

TWIGG, WILLIAM, Surgeon-Lieutenant-Colonel, of the Mid-Ulster Artillery, has taken over Medical Charge of Troops, &c., at Tregantle and Scraesdon, near Plymouth.

VERNON, C. M., L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed Medical Officer for the Workhouse of the West Ashford Union, vice J. H. Mitcheson, deceased.

WALKER, CYRIL HUTCHINSON, B.A., M.B. Cantab., F.R.C.S. Eng., has been re-appointed Ophthalmic Surgeon to the Bristol General Hospital.

WATSON, J. W., M.B., C.M. Aberd., has been appointed Medical Officer for the Elgin Infectious Diseases Hospital.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £50, with board and washing.

BATH EASTERN DISPENSARY.—Resident Medical Officer. Salary £130 per annum, with furnished apartments, coals, gas, and domestic attendance.

BIRKENHEAD BOROUGH HOSPITAL.—Visiting House Surgeon. Salary £75 a year, with board, lodging, and washing, but no alcoholic liquors. A further sum is obtained by certain additional fees.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BIRMINGHAM GENERAL DISPENSARY.—Three Resident Locum Tenens between July 1st and the end of September for from two to three months' consecutive engagement. Terms 4 guineas per week, with furnished apartments.

BRECON INFIRMARY.—Resident House Surgeon, unmarried. Salary £90 per annum, with furnished apartments, board, attendance, fire, and gas. Apply to the Secretary, 6, Bulwark, Brecon, South Wales.

BRISTOL ROYAL HOSPITAL FOR SICK WOMEN AND CHILDREN.—House Surgeon. Salary £120 per annum, with rooms and attendance (not board).

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Pathologist. Tenable, subject to annual re-appointment, for not more than three years.

CITY OF LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer for the above hospitals, unmarried. Salary £100 per annum (subject to a contribution to the Corporation Superannuation Fund), with board, washing, and lodging in the Hospital. Applications to the Town Clerk, Town Clerk's Office, Liverpool.

CITY OF LONDON ASYLUM, near Dartford, Kent.—Assistant Medical Officer to act as Locum Tenens for three months. Salary £3 3s per week, with furnished apartments and board.

CORPORATION OF BIRMINGHAM—CITY HOSPITAL, Lodge-road.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

COUNTY ASYLUM, Prestwich, Manchester.—Assistant Medical Officer, unmarried. Salary commencing at £125, increasing annually by £25 to £250, with board, apartments, washing, &c.

COUNTY BOROUGH OF HALIFAX.—Medical Officer of Health for the Borough. Salary £500 per annum. Drugs, medicines, and surgical appliances provided by the Corporation. Applications to the Town Clerk, Town Hall, Halifax.

CRAIGLOCKHART POORHOUSE AND HOSPITAL, Edinburgh.—Resident Medical Officer. Salary £100 per annum, with board and apartments. Applications to the Clerk of the Parish Council, Council Chambers, Castle-terrace, Edinburgh.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Junior Assistant Medical Officer, unmarried. Salary £130 a year, rising to £150, with board, residence, &c.

DEWSBURY AND DISTRICT INFIRMARY, Dewsbury.—House Surgeon. Salary commencing £100 per annum, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of House Surgeon £100 per annum. Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell.—House Physician for six months. Board, residence, &c., provided, and an honorarium of £25 granted conditionally.

GATESHEAD UNION.—Assistant Resident Medical Officer for the Workhouse. Salary £150 per annum, with furnished apartments, rations, and washing. Subject to superannuation deduction. Applications to the Union Clerk, Offices, Prince Consort-road, Gateshead.

HARRIS PARISH COUNCIL.—Medical Officer for the Southern Division of Harris. Salary £90, besides other public appointments and private practice. Apply to Mr. T. Wilson, solicitor, Lochmaddy, Clerk.

HEIGHAM HALL ASYLUM, Norwich.—Assistant Medical Officer.

HOSPITAL FOR WOMEN AND CHILDREN at Leeds.—House Surgeon, non-resident, for six months. Salary at the rate of £125 per annum.

HOSPITAL FOR WOMEN (THE LONDON SCHOOL OF GYNÆCOLOGY), Soho-square.—Clinical Assistantships.

JESSOP HOSPITAL FOR WOMEN, Sheffield.—House Surgeon, unmarried. Salary £50 per annum, with board, lodging, and washing.

KENT COUNTY OPHTHALMIC HOSPITAL, Maidstone.—House Surgeon. Salary £100 per annum, with board and lodging in the hospital.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon. Salary £140, increasing by £10 annually to £170, with rooms in the Infirmary and attendance (option of board at £40 per annum).

LINCOLN COUNTY HOSPITAL, Lincoln.—Assistant House Surgeon for six months. Honorarium £25, with board, residence, and washing.

LIVERPOOL DISPENSARIES.—Head Surgeon. Salary £200 per annum. And four Assistant Surgeons, all unmarried. Salary £100 per annum each, with board and apartments in each case.

LIVERPOOL NORTHERN HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance in the house.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY, Loughborough.—Resident House Surgeon. Salary £100 per annum, with furnished rooms, attendance, and board.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—Lecturer on Chemistry. Salary £150 per annum, with special fees and an allowance towards expenses of department.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board, attendance, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury, London.—Pathologist. Honorarium of 50 guineas annually.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London.—Medical Woman as Resident Obstetric Assistant.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer, each for six months. Salary at the rate of £50 per annum for each post.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £80 per annum, with board, washing, and residence.

PARISH OF FULHAM.—Second Assistant Medical Officer at the Infirmary, Fulham Palace-road, W., for six months. Salary at the rate of £60 per annum, with board, furnished apartments, and washing. Apply to the Clerk to the Guardians, Offices, Hammersmith, W.

PARISH OF ST. GILES, Camberwell.—Assistant Dispenser for the Infirmary at Havil-street, Camberwell—male or female. Salary £30 per annum.—Apply to the Clerk to the Guardians, Offices, 29, Peckham-road, S.E.

PONTEFRACT GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with furnished rooms, fire, lights, and attendance.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £60 a year, with board, lodging, and washing.

ROYAL BERKS HOSPITAL, Reading.—House Surgeon. Salary £60 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £50 per annum, with board, lodging, and washing. Both appointments for one year.

ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, at Ventnor.—Clinical Assistant. Board and residence and laundry provided. Apply to the Secretary, London Office, 34, Craven-street, Strand, W.C.

ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, with board and washing.

SCHOOL BOARD FOR LONDON.—HOMERTON RESIDENTIAL SCHOOL FOR DEAF CHILDREN, High-street, Homerton.—Medical Officer. Salary £25 per annum. Applications to the Clerk, Homerton School for the Deaf, Offices, Victoria Embankment, W.C.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

SURREY COUNTY ASYLUM, Brookwood, near Woking.—Third Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, lodging, attendance, and laundry.

THE CHIEF INSPECTOR OF FACTORIES gives notice of a vacancy for a Certifying Surgeon under the Factory Acts at Loughton, in the county of Essex.

THE GUARDIANS OF THE ST. GEORGE'S UNION.—Second Assistant Medical Officer at the Infirmary, Fulham-road, S.W., for one year. Salary £70, with board, residence, and washing. Apply to Dr. H. W. Webster, at the Infirmary.

THREE COUNTIES ASYLUM, Arlesey, near Hitchin.—Second Assistant Medical Officer (male), unmarried. Salary commencing at £150 per annum, with board, apartments, washing, and attendance. Applications to Mr. F. G. Butler, Clerk, St. Neots, Hunts.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser, unmarried. Salary £75 per annum, with board and residence.

WANDSWORTH AND CLAPHAM UNION INFIRMARY, St. John's-hill, near Clapham-junction.—Junior Assistant Medical Officer for three months. Salary at the rate of £80 per annum, with board, lodging, and washing.

WARNEFORD HOSPITAL, Leamington.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—House Surgeon, unmarried. Salary £75 per annum, with board and residence and 10s. a month for washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Physician.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Resident Obstetric Assistant for six months. Board and lodging in the hospital provided.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium given at the rate of £50 per annum, and board, lodging, and washing.

YORK LUNATIC ASYLUM, Bootham, York.—Assistant Resident Medical Officer. Salary £130 a year, with board, washing, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

ALLEN.—On May 14th, at Midhurst, Sussex, the wife of William Allen, M.B., of a daughter.

DOVE.—On May 15th, at Crouch-hill, N., the wife of Percy W. Dove, M.B. Lond., M.R.C.S., of a son.

FARTHING.—On May 9th, at Highfield-road, Dartford, the wife of T. Farthing, M.B., of a daughter.

HARRIS.—On May 13th, at Oxford-road, Manchester, the wife of Thomas Harris, M.D., of a son.

RICHARDSON.—On April 24th, at Liverpool-street, Dover, the wife of Joseph Richardson, L.R.C.P., L.R.C.S. Edin., of a son.

WILLS.—On May 15th, at Lower Seymour-street, Portman-square, W., the wife of W. A. Wills, M.D., of a daughter.

MARRIAGE.

STEDMAN—WHEWAY.—On May 8th, at St. Thomas's, Stepney, Savignac Bell Stedman, M.R.C.S., of Binbrook, Lincolnshire, to Jane Grace, younger daughter of the late George Wheway, of Nuneaton.

DEATHS.

ATKINSON.—On May 16th, at Swanton House, Ashford, Kent, Charles Stephen Abbott Atkinson, M.R.C.S., L.S.A., aged 58 years.

HARPER.—On the 14th instant, at 25, Rosary-gardens, South Kensington, after a brief illness, Helen Watson, the loved and loving wife of James Harper, M.D., aged 38.

KEMPE.—On May 12th, at Lancaster-road, Bayswater, Charles Patrick Kempe, M.D., LL.D., M.R.C.S., L.M., L.S.A., aged 66 years.

PAYNE.—On May 13th, at Dryden House, Lincoln-road, Peterborough, George Speke Payne, M.R.C.S., aged 52 years.

THISTLE.—On May 7th, suddenly, at Iukermat terrace, W., William G. Thistle, B.A. Oxon., M.R.C.S., L.R.C.P., aged 42 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A QUESTION OF DEATH CERTIFICATION.

To the Editors of THE LANCET.

SIRS,—By the same post I am sending you a copy of the *Royal Cornwall Gazette* containing the account of an inquest held last Tuesday at the Town Hall, Truro, on the body of a child named Ethel Jose whom I saw just prior to death and as to the cause of whose death I felt myself, after investigating the circumstances, conscientiously able to give a certificate. May I trust to your courtesy to give publicity in your journal both to the newspaper report and to the following supplementary remarks I have to make thereon, as I think the case will prove one of interest to the medical profession generally?

To proceed, then, as I saw the child just prior to death, as I saw no suspicious signs whatever to make me surmise foul play, no sign of a bruise, no sign of malnutrition, and as the whole history of the case clearly pointed to the existence of cerebral meningitis, I felt myself perfectly authorised to certify death as having happened from that cause. This visit of mine to the deceased was paid on Friday, May 8th, and after having given the certificate I heard nothing further with regard to the matter until the following Sunday when, in my absence, I was called upon first of all by P.-C. Roberts and afterwards by Mr. Branwell, who left a courteous message asking me to be present at the post-mortem examination he had been ordered by the coroner to perform on the body of the above-mentioned deceased.

Now, I ask this question, Was it right of the coroner to act in this high-handed way and, without holding any communication whatever with me relative to the case, to have had the body removed to the mortuary and to have ordered a post-mortem examination to be performed by another than myself? It would appear that a rumour had, through the gossip of some malicious neighbour, got abroad that the child was dead before I arrived and that she had been previously beaten black and blue by her mother. On the falsity of both these assertions I could have assured the coroner had he had the courtesy to have consulted me. He ignored me entirely, however. I was not able to be present at the post-mortem examination performed by Mr. Branwell owing to a prior engagement, but you will see that that medical man proved my diagnosis to have been a correct one by finding, on opening the skull, that there was meningitis. Thus my certificate was proved to be correct.

The coroner does not deem it necessary to subpœna me to appear as a witness at the inquest on the Monday, but on the evening of that day he summons me to appear at the adjourned inquest to be held on the following day. What happened there you will glean from perusing the account in the *Royal Cornwall Gazette* which I am posting you. I have, however, one or two further remarks to make before closing my letter relative to the treatment—uncourteous is a mild term to apply to it—I have received from the coroner. On my entering into his presence he informs me that the jury have required me to be called, not as a scientific witness, but to explain and account for certain statements made by the mother of the child. After reading to me the mother's evidence he at once commenced a severe cross-questioning *on scientific subjects*, and after the jury having given their verdict and all in my favour he refuses to grant me my fee, his reason for so doing being that I had not appeared without a subpœna the day previous and so gave the coroner, the other medical man, and the jury the inconvenience of appearing again. But surely this is nonsense, for it was the fact that I should get no fee that caused me to absent myself from the first day's inquest; and my willingness also, knowing that I had acted conscientiously in giving the certificate, to let the matter be investigated in my absence. But the coroner rules that I am to go without my fee after he has summoned me because I would not come without a fee the day before. This may be coroner's logic, but it certainly is not common-sense. The coroner ended by censuring me after the jury had agreed that I was right and after Mr. Branwell had admitted the same thing, saying that it was a fortunate thing for me that Mr. Branwell's certificate proved the cause I had assigned for the death of the child to be correct, for had it been otherwise it would have been a bad thing for me. Comment on this is needless.

Please note that Mr. Branwell did not state, as he appears to have done in the newspaper report, that worms did not produce convulsions. What he denied was that worms produced "meningitis." Apologising for taking up so much of your valuable space and thanking you in anticipation for your insertion and comments,

I am, Sirs, yours faithfully,

W. A. GORDON LAING, M.D. Glasg.

Ambleside Villa, Edward-street, Truro, May 14th, 1900.

*** We are only able to give a short abstract of the proceedings as reported in the *Royal Cornwall Gazette* of May 10th, 1900. On May 7th an inquest was opened at the Town Hall, Truro, by Mr. E. L. Carlyon, concerning the death of Ethel Jose, aged seven years, the illegitimate child of Jane Jose, who is unmarried and has had seven children, of whom four have died. She lived with her mother and her stepfather, her four children, her sister, and a nurse-child in a three-roomed house, but the sister slept out. Jose in her evidence said that Ethel had complained on May 3rd of being tired and on the morning of May 4th of a pain. From nine o'clock until 11 she was unconscious, so Jose went for Dr. Laing, who came at once. The child died almost directly he arrived. He told the mother to go to his house for the certificate in about an hour's time. She did so and he gave it to her. The coroner said that he had notified Dr. Laing of the inquest and had received a note from him in which he said that he considered he was justified after the inquiries he had made in giving a certificate that Ethel Jose had died from meningitis. The inquest was adjourned until May 8th for Dr. Laing to attend. He was subpœnaed to "give an explanation of the evidence of Jane Jose." Mr. C. Branwell, who had made the post-mortem examination at the order of the coroner, Dr. Laing being asked to attend, said that he had found evidence of meningitis and a round worm in the intestines. Dr. Laing gave in evidence that he had attended Jose and her family for some time. He had no knowledge as to whether the child was legitimate or not. When he arrived she was dying. He asked the grandmother some questions and she replied that the child had had convulsions and twitchings. He did not think that there was anything wrong and therefore he gave the certificate. The jury found death to have occurred "from natural causes as expressed in the doctor's certificate." We do not see why Dr. Laing should be deprived of his fee, but had he known all the family circumstances he might have hesitated in giving a certificate. For although the certificate proved quite correct the case was one for a coroner's inquiry, if only in the interest of the mother, concerning whom there were sinister rumours.—ED. L.

"UNUSUAL LAPSE OF TIME BETWEEN TWO PREGNANCIES."

To the Editors of THE LANCET.

SIRS,—The letter of Mr. Pridham in THE LANCET of May 12th on an unusual lapse of time between two pregnancies recalls to my memory the case of the late Dr. —— in the south of Ireland. He had two children by his wife, a boy and a girl. At the time of the girl's birth his son was 25 years old and serving as captain in a Highland regiment at the siege of Sebastopol. I am, Sirs, yours faithfully,

Cavendish-row, Dublin, May 14th, 1900. GEORGE FOY.

SANATORIA FOR PHTHISICAL PATIENTS.

To the Editors of THE LANCET.

SIRS,—Could you or one of your readers kindly tell me of any sanatorium in the south for the open-air treatment of phthisis suitable for a young lady who earns her living as a lady's companion and whose means are strictly limited? The few I have been in communication with are quite beyond her reach.—I am, Sirs, yours faithfully,

May 14th, 1900. G. M. A.

*** It is a little difficult to answer our correspondent's question without knowing exactly what his patient could afford to pay. He will find a list of homes and terms in THE LANCET of Sept. 9th and 23rd, 1899. In answer to a correspondent published in THE LANCET of May 5th, 1900, we said that the usual fees are from two to seven guineas per week, but that possibly a few beds can occasionally be had for less.—ED. L.

A DAY OF REST FOR NURSES.

THE nurses of the metropolitan hospitals and of the London nursing institutions are again invited to spend a "day of rest" at Hertingfordbury on Wednesday, June 27th. The addresses at the two short services held in the parish church will be given by the Dean of Windsor. As hospitality is completely provided the expense to the nurse is limited to the railway fare of 2s. 6d. Any who may wish to be present should communicate with the Rev. A. G. Locke, St. George's Hospital, Hyde Park, or with Canon Burnside, rector of Hertingfordbury, Hertford.

ONIONS IN TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—During my stay in Chili, South America, in 1885 an old Chilian practitioner told me that the juice of onions was a sure cure for typhoid fever if given in its early stages. I have never seen any literature bearing on this subject and would like to know if any member of the profession can give me further information.

I am, Sirs, yours faithfully,

ARTHUR A. COTTEW, L.R.C.S.I., L.R.C.P.E., &c.

Station-road, Portslade, May 11th, 1900.

"APOMORPHINE AS A HYPNOTIC."

To the Editors of THE LANCET.

SIRS,—When we describe apomorphine as an expectorant and emetic we have not summed up all its uses or reached the depth of its powers, and that we have in it a remedy of far greater use was shown by your annotation of a paper by Dr. C. J. Douglas in THE LANCET of April 14th. My experience with the use of the drug may therefore interest some and induce others to give a further trial to it for its hypnotic power. Some two years ago I was called to a patient suffering from delirium tremens and who, I was informed, had within the last two hours drank half a pint of brandy. When I arrived she was simply raving.

With the hope of producing emesis and getting rid of some of the stuff I gave her a hypodermic injection of apomorphine. Charging the syringe with 10 minims I injected three and after waiting for a short time and getting no result I repeated the injection with a like quantity. Still there was no result except a quieting effect. I then repeated the injection, using the remaining four minims. There was just a slight attempt at retching, but nothing to speak of, and in 10 minutes the patient was in a sound sleep. This was somewhat of a surprise to me, but after remaining for half an hour and the placid sleep continuing I left with instructions that I should be sent for if necessary. Nothing, however, occurred, and when I visited on the following morning the patient was quite rational and quiet. I was informed that there had been no sickness and that she had slept soundly and placidly for about two and a half hours. Some days later the same condition of things arose with this patient, and, guided by my previous experience, I at once gave an injection of five minims of the hypodermic solution, and after waiting five minutes with no result I repeated a like quantity and very soon the desired sleep came, which lasted nearly three hours.

Again, in June, 1899, I was called to attend a man suffering from delirium tremens and who, I was informed, had not slept for three nights. There was great difficulty in restraining him and it was necessary that he should have sleep speedily. Remembering my former case I determined to try apomorphine again and gave an injection of five minims, and there being no emesis after five minutes I gave another three minims. In 10 minutes he was in a calm sleep and remained so for over two hours, when he awoke much refreshed and quiet. What astonished me was the absence of emetic action of the drug, as previously, when I had used it for that purpose, from five to 10 minims had acted satisfactorily, but I had noticed that the patient generally went to sleep afterwards. This I had attributed to the exhaustion resulting from the action of vomiting. I am now inclined to think that this was due to the hypnotic action of the drug, but why there should be an absence of emesis in the presence of delirium I cannot understand. Possibly further trial will solve the difficulty.

I am, Sirs, yours faithfully,

South Lambeth-road, S.W. J. MILLER.

THE OLD STORY.

THE following appeared in the *Evening News* of May 12th:—

SHAMEFUL, IF TRUE.

At a Stratford inquest, to-day, Mrs. Prentice, of 43, St. James' road, Forest Gate, said that her husband being taken very ill about 12 o'clock at night she sent her son for a doctor. The first two he called on point blank refused to come, the third said he was too seedy to get out of bed at that time of night.—Dr. Cummins said if he had been called in earlier life might have been saved.—A juror: It's simply scandalous.—The coroner: You can't compel them.—The jury returned a verdict of natural causes, and the foreman strongly censured the doctors "for their inhuman conduct."

It seems to be absolutely impossible to impress upon the public that a medical man, unless he be officially in charge of patients at a hospital, is in no way bound to attend a summons unless he likes, and even a hospital officer is only bound to obey the summons of an accredited messenger. There is no question of humanity or inhumanity in the matter. Take the case of a butcher and suppose a woman were to come and say, "My husband is dying from starvation, give me a chop." The butcher might or might not hand over the chop. In all probability he would not, and we are quite certain that in such a case no coroner's jury would censure him. But censure is as much deserved in one case as in the other. One of the medical men in this case was ill, but we suppose that a medical man has no right to be ill.

WANTED—A DIAGNOSIS.

To the Editors of THE LANCET.

SIRS,—I have under my care a man with what appears to be a new growth of the skin, and from the accompanying description I hope you will enable me to give it a name. *Situation.*—Inner side of left thigh, more on front aspect, at junction of upper third with lower two-thirds of length of thigh. *Area.*—Patch about three and a half inches by five, divided into two areas by a healthy strip one-half to three-quarters of an inch across. It is raised and the whole skin is thickened to almost a quarter of an inch and in places even more. *Colour.*—At first red—due to irritating ointment which had been used; now plum blue—this perhaps caused by the mercurial ointment which he is now using. At a distance the whole effect looks strongly like a very tortuous and enlarged varicose accumulation of veins. *Duration.*—Six months; pain at first, none now. Great itching at commencement, none now. Commenced as papules which seem to have run and become confluent. No sign of pustulation or discharge. He denies syphilis, and as he has been in the army he is having specific treatment which seems to benefit him. Thanking you in anticipation,

I am, Sirs, yours faithfully,

May 14th, 1900. A. A. B.

*** Our correspondent does not mention what is the consistence of the growth which he describes or whether the skin is adherent to the swelling or the swelling to the deeper structures. So far as it is possible to form an opinion from the data furnished we are inclined to think that the growth is probably gummatous in nature.—ED. L.

ACETYLENE LAMPS FOR BICYCLES.

IN THE LANCET of July 1st, 1899, p. 40, we pointed out that the increasing use of the brilliant and dazzling acetylene flame on bicycles was likely to be a source of danger to the public. Some attempts have been made since that warning appeared to reduce the dazzling character of this light by modifying both the burner and the reflector of the lamp. The Phos Acetylene Company of 59 & 60, Chancery-lane, W.C., for example, have sent us a bicycle lamp which is provided with a steatite burner giving a flame having length rather than breadth, besides which the reflector consists of a series of concentric grooves so that the light does not flash beyond a given area. We agree that these are improvements, but the general objections to this system of lighting still obtain. The evolution of acetylene from carbide is irregular and difficult to control. The greatest drawback, however, is that when it is required to extinguish the light the evolution of acetylene proceeds in accordance with the amount of water that is in contact with the carbide. Undoubtedly acetylene is a splendid illuminant, but we have not yet met with an apparatus which adapts this light satisfactorily on all sides for practical purposes.

THE HEALTH OF ENGLISH PUBLIC SCHOOLS.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if you or any of your readers could tell me where I can get any statistics of, or information as to, the health of the English public schools.

I am, Sirs, yours faithfully,

May 14th, 1900. NEMO.

TURNER'S CYCLE TOOL-BAG.

MR. H. G. TURNER, of Eldon-grove, Manchester, the inventor of the useful Bi-carrier, has forwarded to us a specimen of a tool-bag which possesses distinct merits. It is made solidly of leather and the front being attached to the sides by a gusset anything can be conveniently taken from the inside of the bag. An arrangement of straps and pockets prevents the tools from rattling, while the simple fastening by which attachment is made to the back stays renders the bag rigid and makes it at the same time capable of being detached instantaneously. On the front flap is a celluloid plate at the back of which the cyclist's name and address can be affixed. This useful adjunct to the cyclist's comfort can be obtained at the prices of 3s. and 4s. according to quality.

S.—We believe that where the Lawrence sterilising apparatus has been in use, both on the large and domestic scale, it has given satisfaction. The address of the makers was the Lawrence Water Steriliser Company, Norland Yard Works, Uxbridge-road, W., to whom our correspondent should apply for detailed information.

ERRATUM.—In an annotation headed "Pneumonia in Middlesbrough" which appeared in THE LANCET of May 12th, p. 1380, reference is made to the article upon Pneumonia in the fifth volume of Allbutt's System of Medicine as being written by Dr. William Hwart. This is incorrect, the writer of the article in question being Dr. Pye-Smith.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 17th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
May 11	30·04	S.E.	...	85	60	40	45	49	Fine
,, 12	30·05	S.E.	...	70	51	45	45	48	Overcast
,, 13	30·03	N.E.	...	71	51	43	44	47	Cloudy
,, 14	29·98	N.E.	...	101	56	39	43	47	Cloudy
,, 15	30·06	N.E.	...	101	59	40	45	49	Cloudy
,, 16	30·09	N.	...	108	59	40	45	48	Overcast
,, 17	30·13	N.	...	97	59	43	43	46	Overcast

During the week marked copies of the following newspapers have been received: *Dundee Advertiser, South Wales Daily News, Sheffield Daily Telegraph, Middlesbrough Gazette, Scarborough Daily Post, Financial News, Southampton Observer, Leeds Mercury, Bradford Observer, Liverpool Daily Post, Blackburn Daily Telegraph, Westminster Gazette, New York Sun, Clifton Chronicle, Mandalay Herald, Standard, Birmingham Daily Post, Norfolk Weekly Standard, Glasgow Herald, Manchester Guardian, Pioneer Mail, Times of India, Lincolnshire Daily Post, Nottingham Daily Guardian, Bristol Mercury, Citizen, Scotsman, United Service Gazette, Builder, Architect, Yorkshire Post, Brighton Gazette, Melbourne Age, Cornish Times, Public Health Engineer, Stockton Herald, Kentish Observer, Newark Advertiser, Perth Constitutional, Hertfordshire Mercury, Willesden Chronicle, City Press, Reading Mercury, Mining Journal, Grimsby News, Kettering Guardian, Colchester Mercury, Dover Express, British and Colonial Printer, Coventry Times, Lakes*

Chronicle, Flintshire Observer, Drogheda Advertiser, East London Daily Dispatch, South Africa, Surrey Advertiser, Local Government Journal, Sanitary Record, Royal Cornwall Gazette, Staffordshire Advertiser, Y Seren (Bala), Galway Observer, Weekly Free Press and Aberdeen Herald, Dorking Advertiser, &c., &c.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (26th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (21st).—SOCIETY OF ARTS.—8 P.M. Prof. V. Lewes: The Incandescent Gas Mantle and its Use. (Cantor Lecture.)

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Annual Conversazione. Reception by the President. 8.45 P.M. Oration:—Dr. J. K. Fowler: Science and Medicine in the Eighteenth Century.

TUESDAY (22nd).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Addresses:—Mr. C. T. Dent and Sir William Mac Cormac: The Wounded in the Present War. (Illustrated by lantern slides and an exhibition of specimens showing the effects of various forms of bullets.)

THURSDAY (24th).—DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Presidential Address by Dr. A. J. Harrison. Discussion on Seborrhœic Conditions of the Skin, the Associated Constitutional Conditions and the Treatment (introduced by Mr. W. Anderson). Dr. R. Crocker, Dr. S. Mackenzie, and others will join in the discussion. Cases will be exhibited as usual.

FRIDAY (25th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Annual General Meeting. Election of Officers, 1900-1901. Papers:—Mr. A. E. Barker: A Case or Gastroenterostomy followed by Pylorectomy, Recovery.—Dr. W. F. V. Bonney (introduced by Dr. Abercrombie): A remarkable Case of Obscure Septicæmia treated by Antistreptococcus Serum and Nuclein.—Dr. W. Pasteur: Conclusion and Post-mortem Notes of a Case of Graves's Disease in which Bradycardia supervened (shown at the Society, April 29th, 1898).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. Fox: Consultation. (Skin.)

TUESDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Sir W. H. Broadbent: Consultation. (Medical.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Dr. Buzzard: Syringomyelia.

WEDNESDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. O. Hawthorne: Consultation. (Medical.)

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Mr. S. H. A. Stephenson: Clinical Demonstration on Eczematous (Phlyctenular) Affections of the Eye. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. C. T. Williams: The Relation of Pleurisy to Pulmonary Tuberculosis.

THURSDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Abercrombie: Medical Cases. (Post-graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. B. Pitts: Demonstration of Selected Cases.

FRIDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. Spicer: Consultation. (Eye.) 5-7 P.M. Mr. J. Griffith: Class. Practical Ophthalmology. Demonstration XI.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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